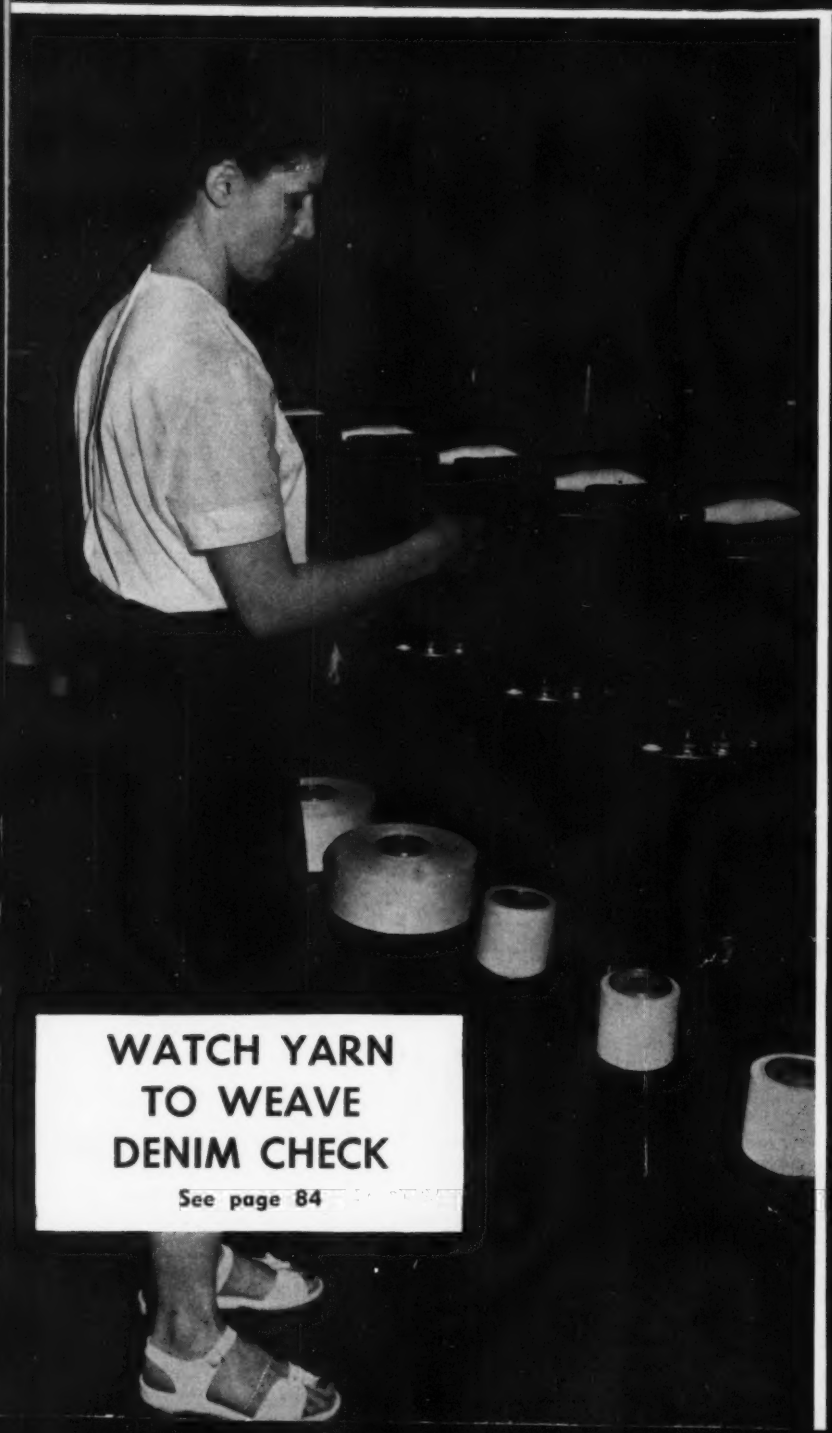
TEXTILE WORLD



WATCH YARN TO WEAVE DENIM CHECK

See page 84

IN THIS ISSUE:

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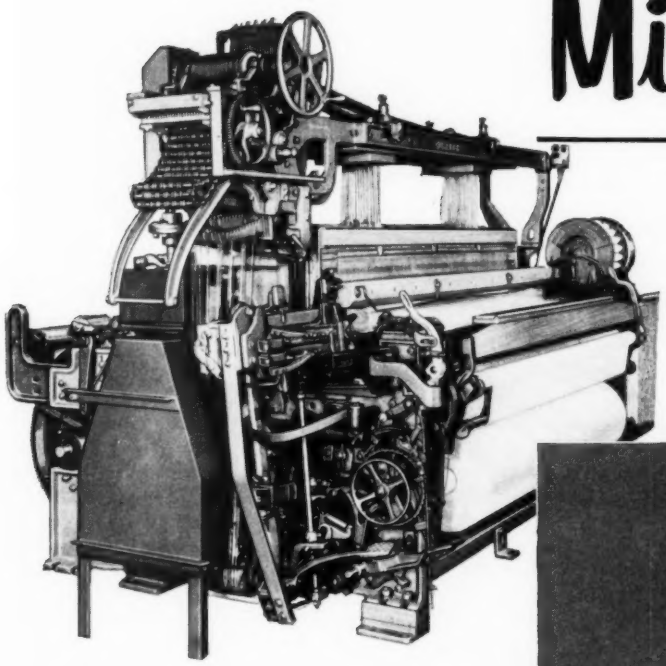

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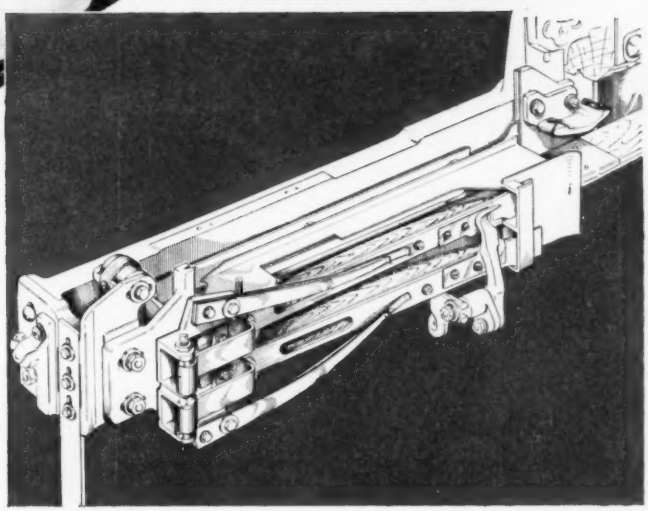

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THE *Long-Range* VIEW

We Could Tell the Truth

In the last few weeks, the 1953 operating statements of several textile organizations have been issued. One of the most striking things to be gathered from these statements is that for months many business leaders in the industry just plain have not been telling the truth.

Last month in our annual Review and Forecast section, we published the results of a survey that showed that mills spent more money in 1953 for machinery, equipment, and supplies than in any year in history. We had heard so much complaining about how bad business was that we could hardly believe the results of the survey; and before we published it, we checked with several companies about their survey statements. In most instances they agreed that sales were all right; "but," many of them said, "profits are no good."

The same thing happened in the case of mills. On a number of occasions we were told by mill men that business was no good. When we pointed out that the record showed that fiber was being consumed at a good rate, the same switch mentioned above occurred: "Well, production is all right, but profits are no good."

At the time of this writing, we have seen the 1953 statements of several of the suppliers and mills from whom we got these discouraging reactions, and we are wondering very seriously whom these fellows are trying to kid. Why should these industry leaders insist on singing the blues?

Just the other day we had lunch with one of the key men in one of the biggest textile organizations in the country. When we inquired about business, he promptly said, "Terrible. Our plants are practically shut down, and we're going in the red every day."

This same man had told us the same thing in almost the same words in 1953. A few days after the luncheon conversation, the statement of his company's operations for 1953 was issued. Sales were up considerably, and profits were up several times over 1952.

Of course, there were mills and suppliers who did not follow that pattern. Perhaps there were sound economic reasons for their unprofitable operation, or perhaps in some cases they are always marginal operators except in emergency years when profits are easy. If these people complained, at least they were telling the truth for their own operations. The villians in the piece were the operators who took up the chant in spite of the fact that they were doing good business.

We can see no sensible reason for distorting facts merely for the sake of painting a gloomy picture. It is almost as though some textile leaders think it is immoral to make money and they must not let people know. In spite of the well-known fact that everybody deserts a sinking ship, they go out of their way to create the impression that the textile industry is a perpetually sinking ship.

This psychology is completely beyond our understanding in mature, intelligent business leaders. It is a child's game, as futile and foolish as a couple of kids playing "Guess what I'm looking at." These same business leaders will tell you quickly that enough people can talk up a depression. After busily talking up a gloomy picture for the textile industry on a number of occasions, they innocently wonder why the industry has such a "bad press"—meaning why do newspapers and general business magazines publish unsavory news about the textile industry.

It is time that these leaders learn a few basic facts about publicity and the effect that out-of-the-side-of-your-mouth talk, and even remaining silent when you should speak up, can have. A great number of people are beginning to wonder, now that the records are in, why the truth was not told. And the question is also being asked: Are textile-industry leaders, as business leaders, lightweights?

We have no desire to encourage either optimism or pessimism here. Our only desire is to point out that unwarranted pessimism is a boomerang. The person who paints a black picture may get some sort of strange personal satisfaction from sounding what he mistakenly thinks is conservative, or he may even be making a bid for sympathy. But the one certain thing is that he is discouraging business. Nobody is going to buy his goods out of sympathy. On the other hand, if he sounds as though his firm and industry are failing, the sinking ship will be deserted. And the little personal satisfaction he may have gotten becomes expensive indeed.

Everyone agrees that empty optimism is usually a sign of an empty head. We cannot see that empty pessimism indicates any other kind of head either.

It is our sincere hope that textile men will stop howling an automatic "Business is terrible" and will, on every occasion where an answer should be given, think seriously about what the status really is. Then all they have to do is tell the simple truth.

O. M. Thomas

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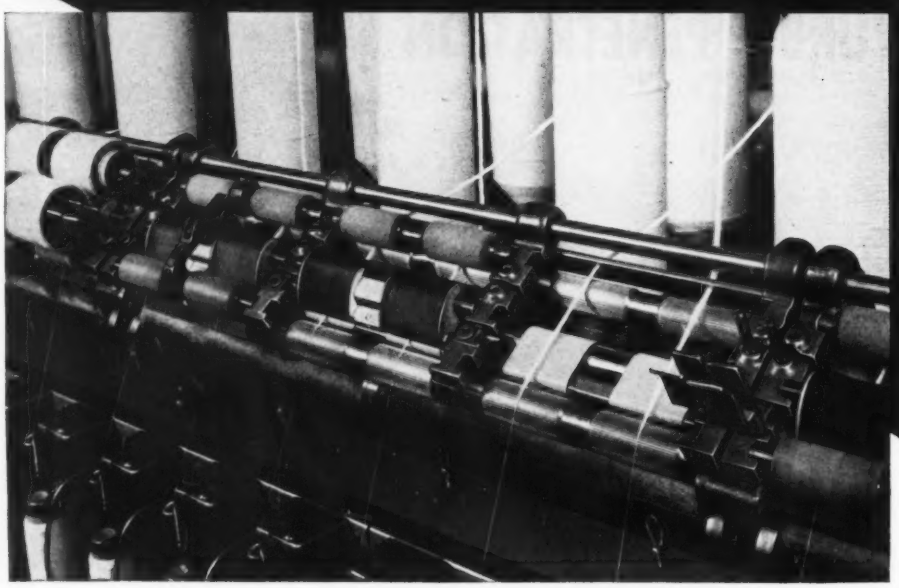

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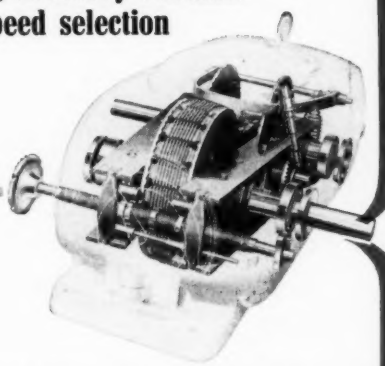

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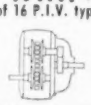

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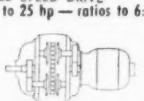

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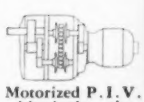
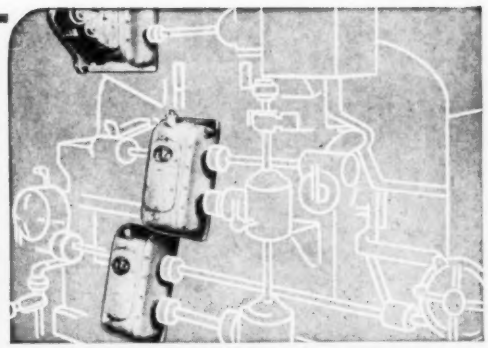
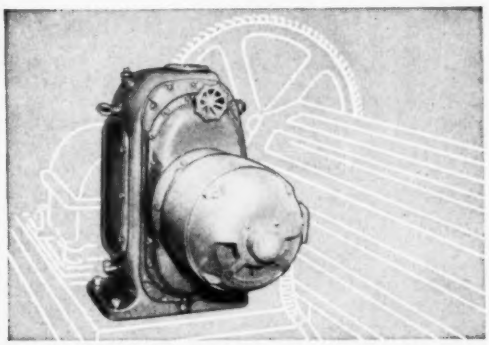


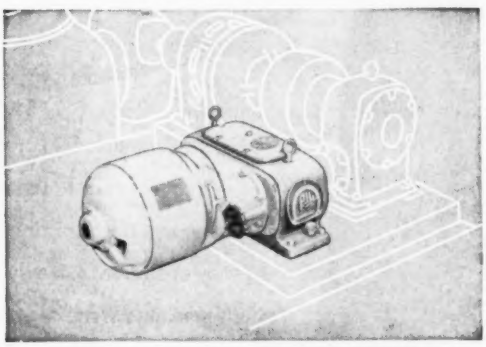
Motorized P.I.V. with single reduction input and double reduction output helical gears.



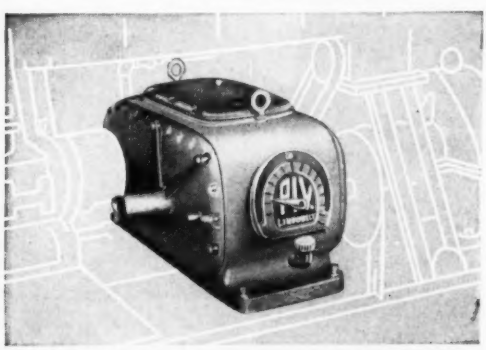
POSITIVE OPERATION OF DIFFERENTIAL SPEED EQUIPMENT. P.I.V. also provides precise regulation of rotary motion.



FLEXIBILITY IN TIMING. In addition, P.I.V. offers accurate control of processing speeds, unaffected by atmospheric conditions.



STEPLESS CONTROL OF PRODUCTION LINES OR INDIVIDUAL MACHINES, either manually or automatically, positively, dependably.

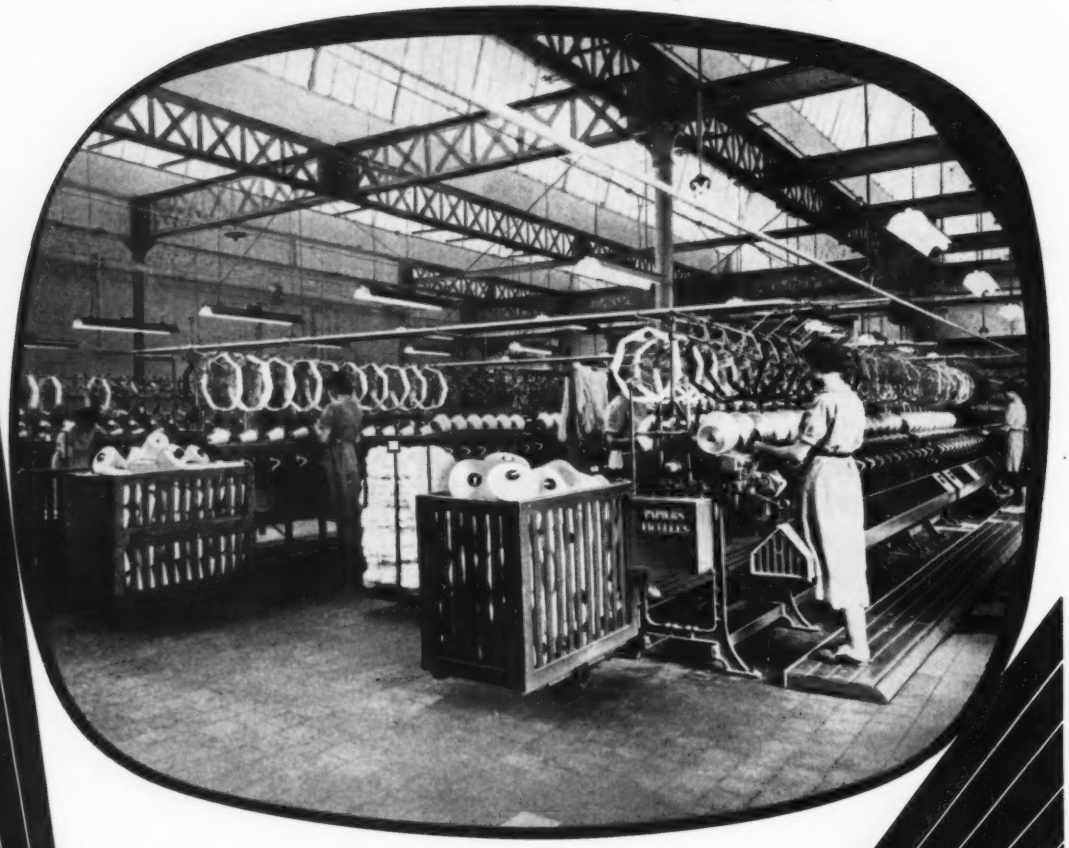


EXACT SYNCHRONIZATION OF ROTATING PARTS AND MACHINES. P.I.V. is needed where automatic sequence control must be stepless.

For more information, write direct or use Reader Service post card.

SCHWEITER LTD

HORGEN - Zurich (Switzerland)



Modern Schweiter KM type vario coners wind a better waxed, knotless yarn to the famous Schweiter cones without waste. Results in perfect knitting . . . lower winding costs and silent operation — only a few features of this precision built machine. Write for further information or references from our many satisfied customers.

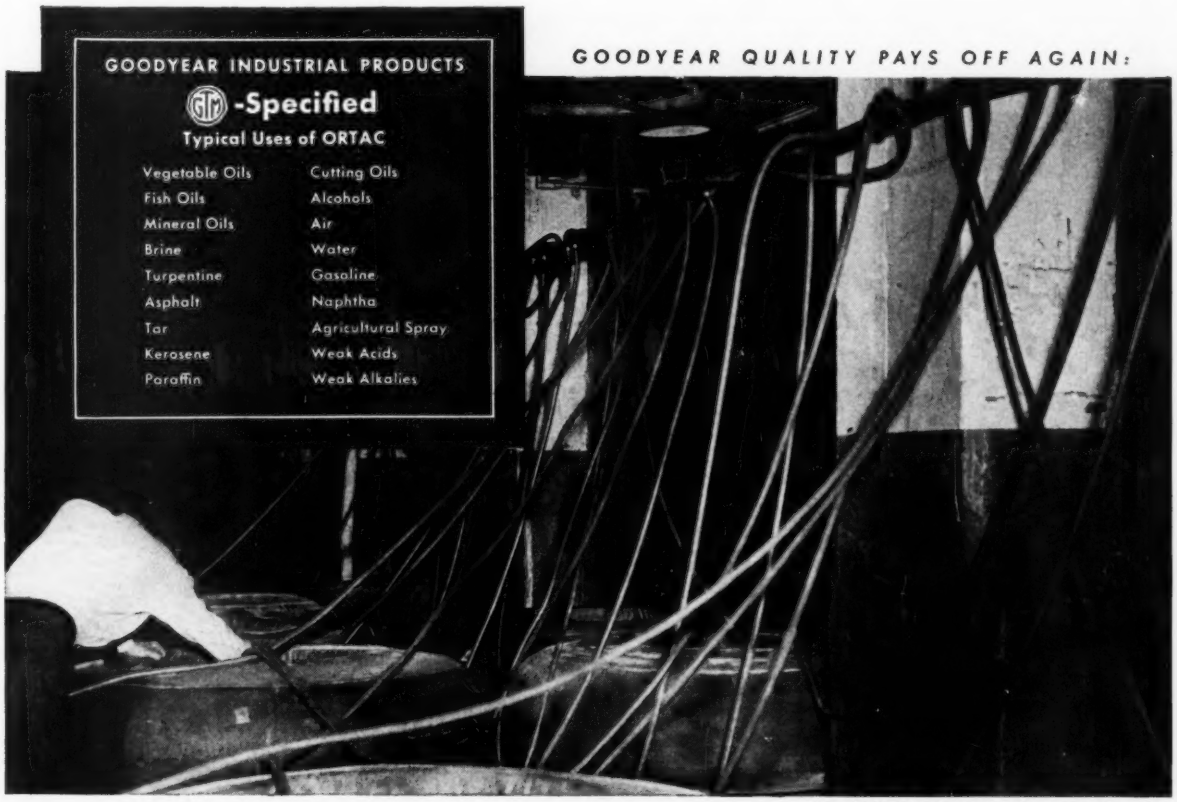
Schweiter

..... designed to outperform the best

Sole agents for the U.S. and Canada · AMERICAN SCHWEITER COMPANY · *Whitinsville, Mass.*

For more information, write direct or use Reader Service post card.

GOODYEAR QUALITY PAYS OFF AGAIN:



Ortac—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

THIS ONE HOSE does the work of FIVE

ORTAC is its name.

ORTAC means Oil Resistant Tube And Cover. It means this one hose is resistant — inside and out — to oils, greases, solvents, water and weak acids or alkalies. It means this one hose can handle the jobs in your plant that usually require *five* different types of hose. It means this one hose can cut your costs and inventory to the bone.

ORTAC has other features, too. It's long wearing. It's sun- and weather-resistant. And it's reinforced with vertically braided, high-tensile rayon cord. This means you get high burst strength and resistance to "tow-rope" strains combined with light weight and extreme flexibility. All this adds up to a long, multiple life at low cost.

The G.T.M.—Goodyear Technical Man—or your Goodyear Distributor can give you full details on ORTAC or any of the more than 800 types of hose in the line. Call either one, today. Or write to Goodyear, Industrial Products Division, Akron 16, Ohio.

YOUR GOODYEAR DISTRIBUTOR

can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."

GOODYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

Century TEXTILE MOTORS

BREATHE CARD ROOM LINT

without Choking

Troublesome lint and textile dust flow right through Century Textile Motors. The motors have specially designed, wide, smooth air passages that allow lint to pass through without clogging. Century Textile Motors are equipped with large fans to assure a strong blast of cooling air over the bearings and around the windings.

Just as Century Textile Motors are specially made for trouble-free, low-maintenance operation, a complete line of general purpose Century motors are available to meet the other needs in your mill.

Century motors are made in sizes from 1/8 to 400 h.p., in a wide variety of types including drip proof, splash proof, totally enclosed and explosion proof. Selective speed drives 1 to 150 horsepower.

Specify Century motors for all your needs.

Century C MOTORS

Century 1½ h.p. textile motors give dependable performance, unhampered by the lint from these cotton cards.

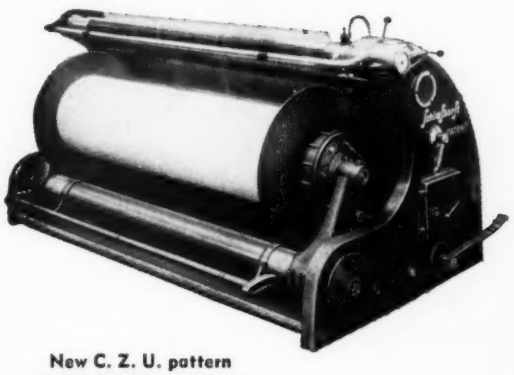
CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Mo. • Offices and stock points in Principal Cities

-802

MODERN MACHINERY FOR WINDING AND WARPING

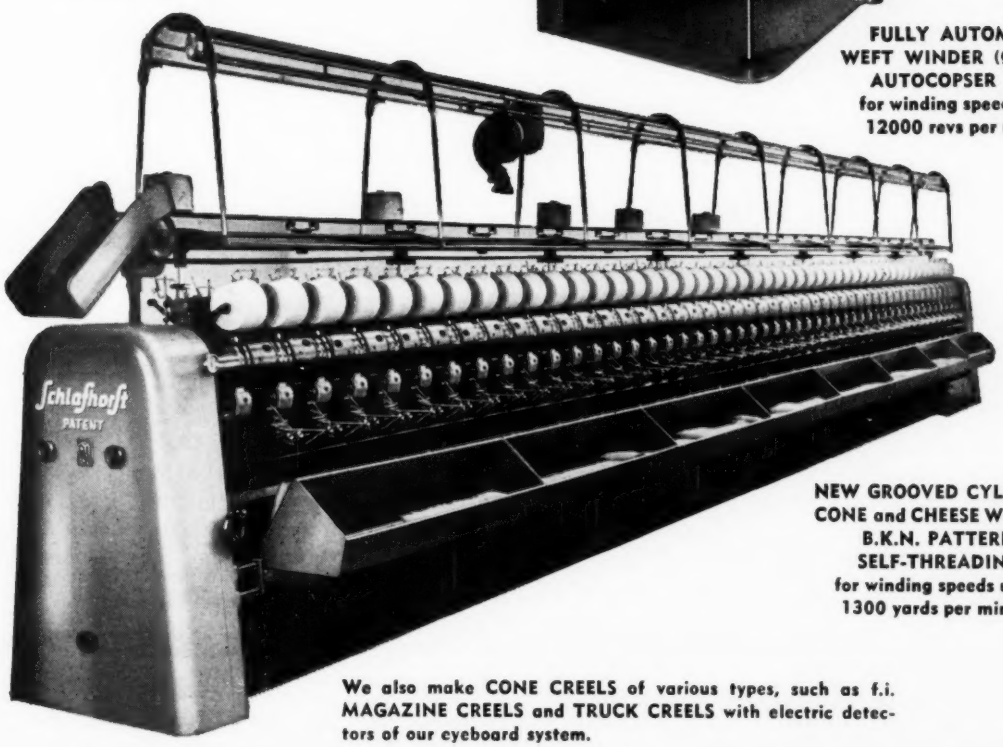
.... Schlafhorst ....

UNIONMATEX



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A.S.E.
for winding speeds up to
12000 revs per minute



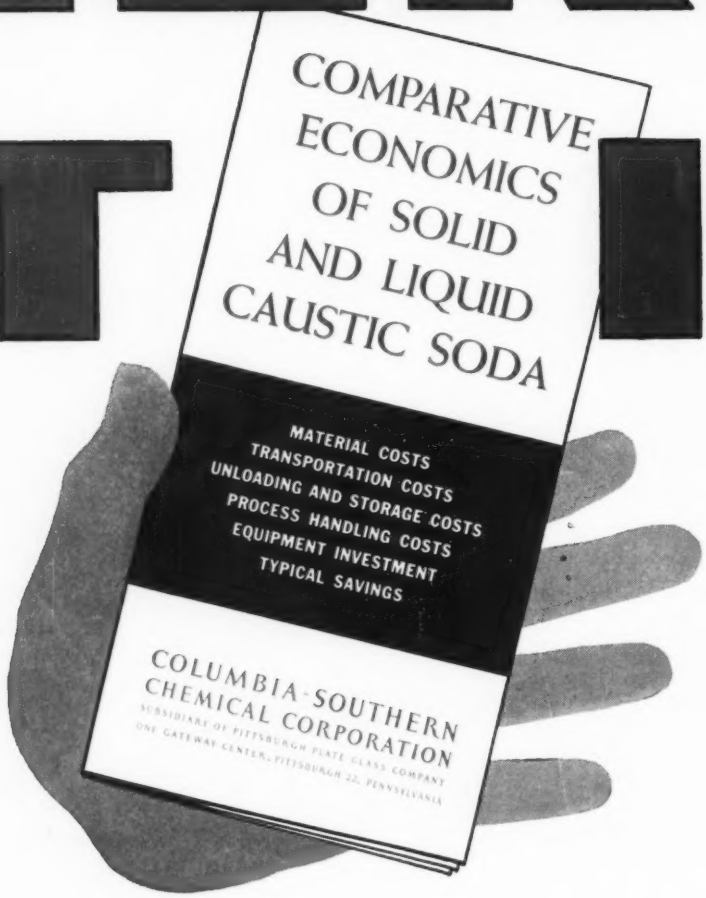
NEW GROOVED CYLINDER
CONE and CHEESE WINDER
B.K.N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute

We also make CONE CREELS of various types, such as f.i. MAGAZINE CREELS and TRUCK CREELS with electric detectors of our eyeboard system.

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

Here's

HERE IT IS



YOUR PROFITABLE GUIDE AND IDEA BOOKLET ON CAUSTIC SODA

The first time ever published, this handy, easy-to-read reference booklet packs a lot of facts in a few orderly pages.

Answers the questions: "What form of Caustic Soda should I buy?" "How do I figure costs?" "How much will I save?" "What equipment will I need?" "What about transportation and unloading?"

GET YOUR FREE COPY NOW!

If your work involves the use of caustic soda, you will find this booklet very helpful. Write today on company stationery for Comparative Economics Booklet, Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pennsylvania.

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SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER, PITTSBURGH 22, PENNSYLVANIA

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DALLAS • HOUSTON • PITTSBURGH
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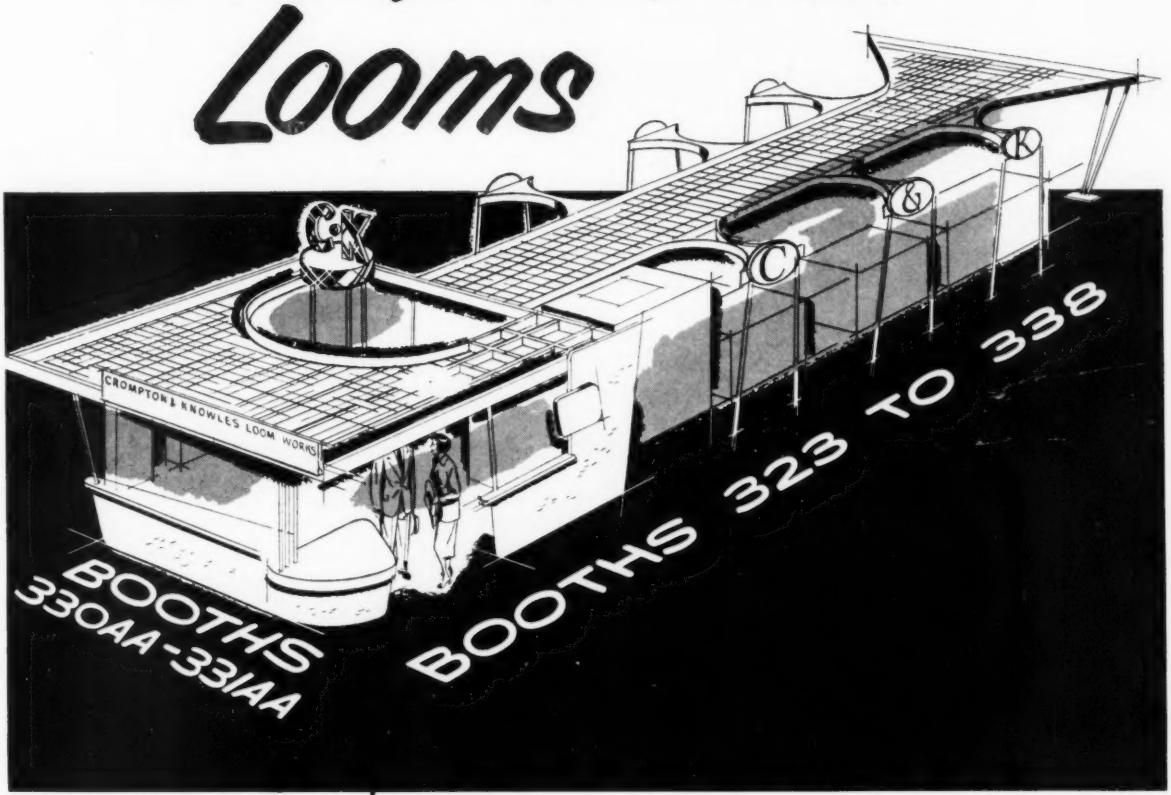
Here's Where to See C&K's 7 New Looms



TEXTILE MACHINERY AMERICAN ASSOCIATION EXHIBITION
ATLANTIC CITY APRIL 26-30 1954

Booths 323 to 338
330AA to 331AA

One of the largest and most easily distinguished exhibits at the Atlantic City Show, C&K's *Pavilion of Progress for the Weaving Industries* will feature 5 new looms never shown before:

1. Weaving gray flannel filling mix.
2. Weaving 2-color denim automatically.
3. Weaving 4 x 1 filament dress goods automatically.
4. Weaving 4 x 1 spun rayon blends.
5. Weaving 2 x 1 upholstery fabrics.

Also a new Narrow Fabric Loom . . . a new W-3A Loom automatically producing many pick-and-pick weaves . . . and one of C&K's latest Jacquards. So get the biggest news of the show as soon as you get there . . . at the modern C&K exhibit shown above.

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa.

Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

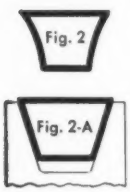
Why V-Belts with CONCAVE SIDES Last Longer!

(U.S. PAT. NO. 1813698)

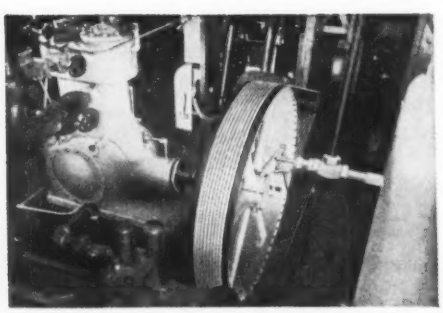
Prove this yourself!

Take any *straight-sided* V-Belt (Fig. 1). Bend it—as it bends in going around a pulley. The sides will at once *bulge out* (Fig. 1-A). Clearly, those bulging sides will press *unevenly* against the V-pulley—and this causes *extra wear* at the points shown by the arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2)



Instead of *bulging,* the precisely engineered CONCAVE SIDES merely *fill out* to *fit exactly* in the sheave groove (Fig. 2-A). The sides press *evenly* against the V-pulley. All wear is distributed *uniformly* across the *full width* of the Gates Vulco Rope—and this means *longer* belt life and *lower belt costs* for you!



Typical Gates Vulco Rope Drive—the Gates V-Belts are built with Concave Sides to insure longer belt wear.

When you buy V-Belts, be sure to get the V-Belt with the CONCAVE Sides—the Gates Vulco Rope!

Gates VULCO ROPE DRIVES

REG U.S. PAT. OFF.

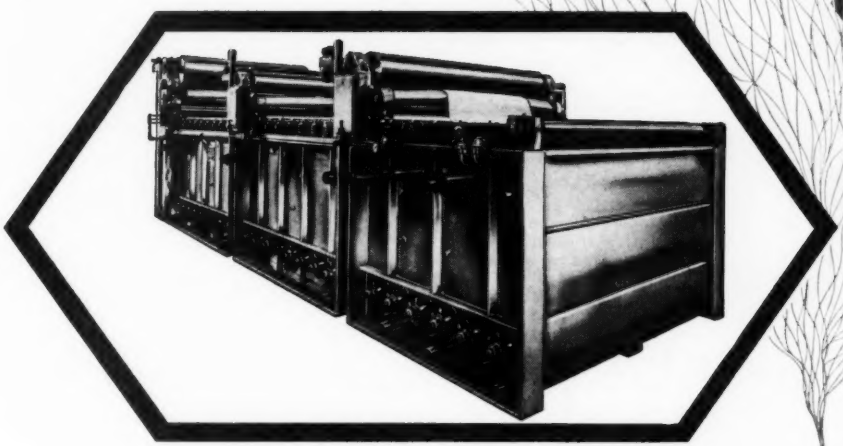
Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and in 71 foreign countries.

THE GATES RUBBER COMPANY
DENVER, U.S.A.

For more information, write direct or use Reader Service post card.

CORDUROY OR MARQUISETTE

run equally well on Tensitrol® Open Width Washers



In continuous bleaching, in pad steam dye ranges, in scouring or boil-off, in washing after resin application, and in other washing operations . . . Tensitrol Open Width Washers are today improving the hand and appearance of many types of fabrics.

As heavy as one yard per pound or as light as gauze, fabrics speed through Tensitrol Open Width Washers with remarkable washing efficiency.

Regardless of shrinkage in process, tension is at a minimum for any fabric, compatible with freedom from wrinkles, creases and tie-ups; the relaxed material being most receptive to the penetrating and flushing action of the agitated liquor . . . even at speeds of 100 yards or more per minute.

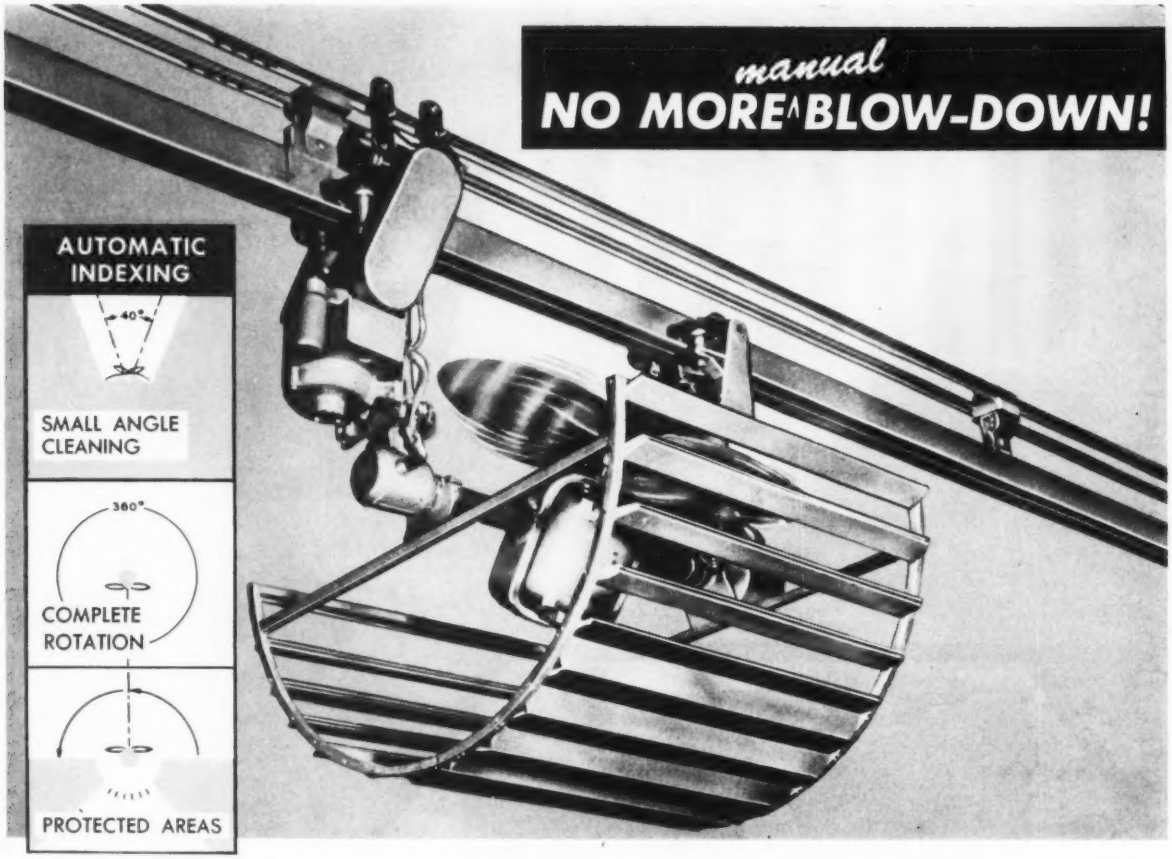
We can advise you on the profitable use of patented Tensitrol Washers in the light of actual field results if you will write us a brief description of your process.

Manufacturing Engineers Since 1840

RODNEY HUNT®

RODNEY HUNT MACHINE CO.

66 MILL STREET, ORANGE, MASSACHUSETTS, U. S. A.



Bahnson's New ALLRED Traveling Cleaner Cleans Anywhere—or Everywhere—*Automatically!*

Forget those weekly shutdowns for cleaning walls, ceilings, overhead equipment! Reduce maintenance costs, improve yarn quality and achieve fulltime operation with Allred Traveling Cleaners—newest development textile-engineered by Bahnson.

The *only* traveling cleaner that blows perpendicular to its track, the Allred cleans walls, *both* sides of ceiling beams, sash openings—thoroughly blows-down *every* surface within its predetermined cleaning pattern.

Completely automatic indexing sets the Allred Cleaner to blow at one angle for a complete circuit of its ceiling-suspended track, then rotate its airflow direction for its next circuit.

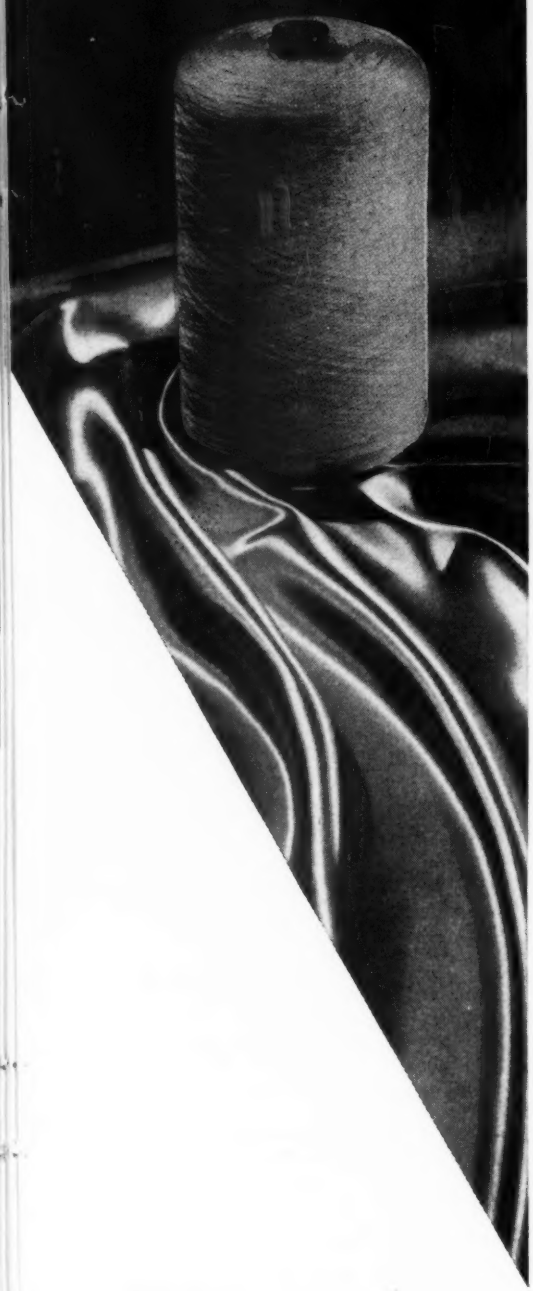
Adjustable for any cleaning angle from 40° to 360°, this is the only cleaner that can be set to provide complete cleaning from floor to ceiling with a single unit. If needed, U-Shield blades cut off any portion of airblast to protect card web or other critical areas.

Since it prevents the accumulation of lint, the Allred Cleaner increases the quality of your yarn and cloth by eliminating slubs and gouts.

See this new time-saving, money-saving Allred Cleaner in operation at the American Textile Machinery Exhibition in Atlantic City, April 26-30. But first—get the full story . . . write for Bulletin 21-A.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • HUMIDIFICATION • CLEANING



THE INDUSTRY ASKED FOR:

Levelness and good penetration in package dyed woolen and nylon yarns

Sandoz supplied the answer:

EKALINE F

EKALINE F, a nonionic dyeing assistant developed by Sandoz, is especially effective in package dyeing woolen yarns and nylon yarns. Excellent migration is obtained through its use, resulting in good penetration and levelness.

A nonionic fatty polyethylene glycol ether, EKALINE F is applicable on all fibres and stable to strong acid or alkali at the boil. It is compatible with anionic, nonionic and cationic compounds. EKALINE F has proved effective when used with Xylene Fast "P" colors, Brilliant Alizarine Milling colors, Lanasyn dyestuffs and Sandonyl dyestuffs.

Applications: In addition to package dyeing, EKALINE F is useful in many other specific dyeing applications. For example, hosiery dyers using acetate colors for nylon full-fashioned hose also find EKALINE F a great help in obtaining a good union between the multifilament welt and the mono-filament boot even at high temperatures.

Another interesting application is in the dyeing of woolen fabrics containing viscose decorations. These can be dyed with Vitrolan colors by adding 1% EKALINE F to replace approximately one half of the usual amount of sulphuric acid.

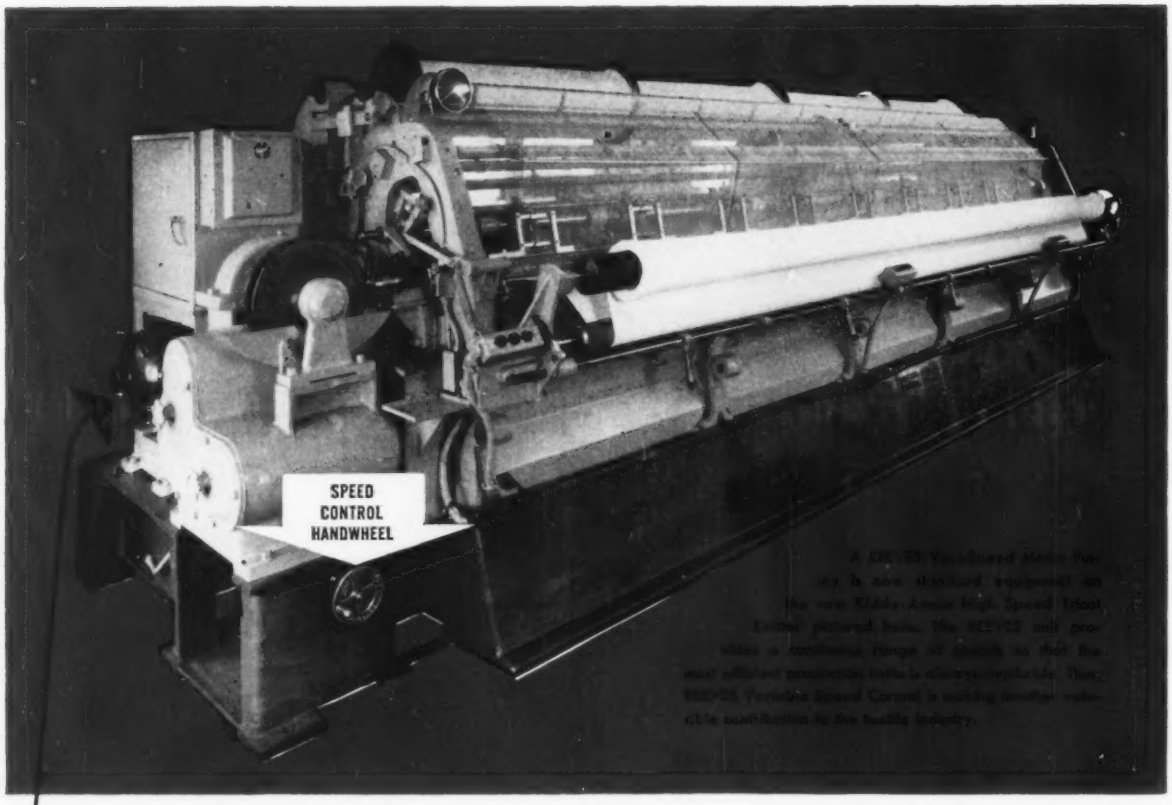
For full details and additional application data, write for your free EKALINE F folder. Sandoz branches are in Hudson, Mass.; Providence; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N.Y.

B.3.5

SANDOZ

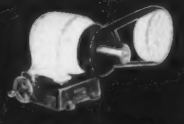
SANDOZ

THINKS AHEAD WITH TEXTILES



The Three Basic Reeves Units

VARIABLE SPEED TRANSMISSION provides infinite, accurate, stepless adjustability over a wide range—as high as 16 to 1. Sizes to 87 hp.



VARI-SPEED MOTOR PULLEY converts any standard, constant-speed motor to a variable speed drive. Speed variations to 4 to 1. Sizes to 10 hp.

VARI-SPEED MOTODRIVE (R) combines motor, speed-changing mechanism and gear reducer in one unit. Speed variations as great as 10 to 1. Sizes to 25 hp.

Better Fabrics for Less...with REEVES Variable Speed Control!

Throughout the textile industry, REEVES Variable Speed Drives are at work—bringing about uninterrupted, high-speed production . . . uniformly higher quality . . . and lower costs! REEVES units are in operation on virtually every type of machine used in the preparation, fabrication, spinning, twisting, or finishing of yarn or cloth. They provide the close control of speed necessary to accommodate variations in texture, weight, temperature, humidity, or operator skill.

Naturally, no one type of unit can be the most efficient for every speed control problem. So REEVES offers a complete line—three basic units, each available in a wide range of designs, sizes, capacities, and speed ratios . . . controlled with the turn of a handwheel, the touch of a button, or automatically, without stopping production.

A REEVES field engineer, thoroughly familiar with textile mill operations, will be glad to meet with you to discuss your particular speed control needs. Write for his name and for your *free* copy of Bulletin No. W79d-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Variable Speed Control

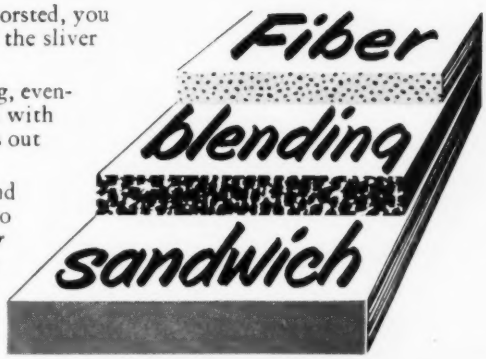
accurate · variable

REEVES *Speed Control*

COLORS When blending colored fibers for Bradford or French worsted, you can actually see the colors spread evenly across the width of the sliver as the *melangeur's* layers are sandwiched together.

SYNTHETICS The laboratory will confirm the same deep blending, evenness of sliver and weight regularity in blends of natural wool with synthetic fibers or cotton. One high production *melangeur* cuts out many doubling-blending operations.

FASTER Further drawing progresses faster, with less attention and consequently at lower cost. When you are considering ways to improve blending, remember *melangeur* is French for *blender* and is manufactured by the Societe Alsacienne de Constructions Mecaniques. In America, Atkinson, Haserick & Co. offers engineering, installation and parts service for *melangeurs* and all the preceding and following operations, an unequalled service to worsted mills.



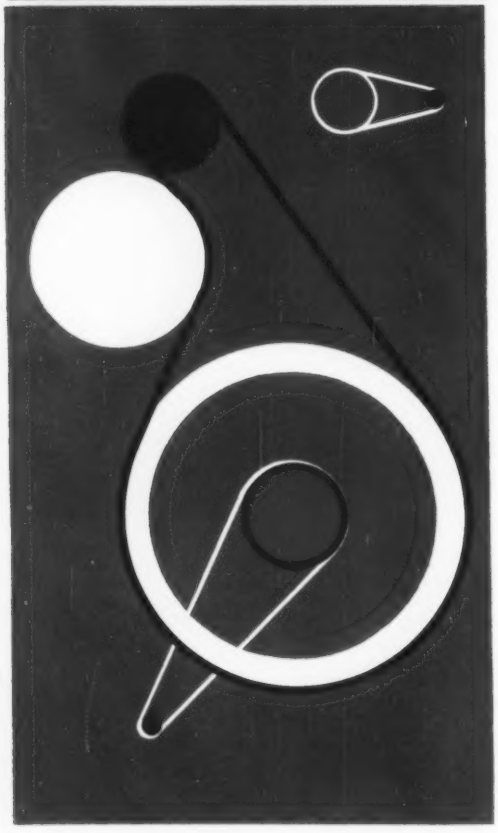
3 Dimensional Blending

In this *melangeur* (mixer intersecting), the different fibers are formed into a sandwich blend. Perfect regularity is obtained in all dimensions: cross sections at any point in the length of the sliver will not vary in composition. May we show you a blended sample, as delivered into this rectangular can or wound into a ball?

SOCIETE ALSACIENNE
DE CONSTRUCTIONS MECANIQUES
MULHOUSE, FRANCE

a. h. *Atkinson, Haserick & Co.*
TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1823
211 Congress St., Boston 6, Mass.
1639 W. Morehead St., Charlotte 2, N. C.

you get "more use per dollar" two ways . . .



with CONDOR WHIPCORD BELTS

These endless belts are cost-savers on all endless drives, but they prove their extra quality on "belt-killer" drives—short centers, small pulleys, reverse bends, high speed and high tension.

Condor Whipcord Belts are practically unaffected by variations in atmosphere—no shrinkage —no stretch—no downtime for take-up.

Extensible-Tip cover-end splice with rubber rivets (shown above) eliminates cover separation, gives belt much longer life—outlasts 2 or 3 ordinary types of endless belts on many drives.

You get "More Use per Dollar" two ways . . . more dependable machine operation . . . longer endless belt life.

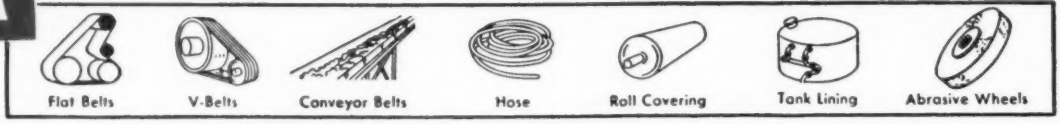
Ask the R/M Distributor for Bulletin 6869.

He also can tell you how to get "More Use per Dollar" with R/M hose, V-belts and conveyor belts.

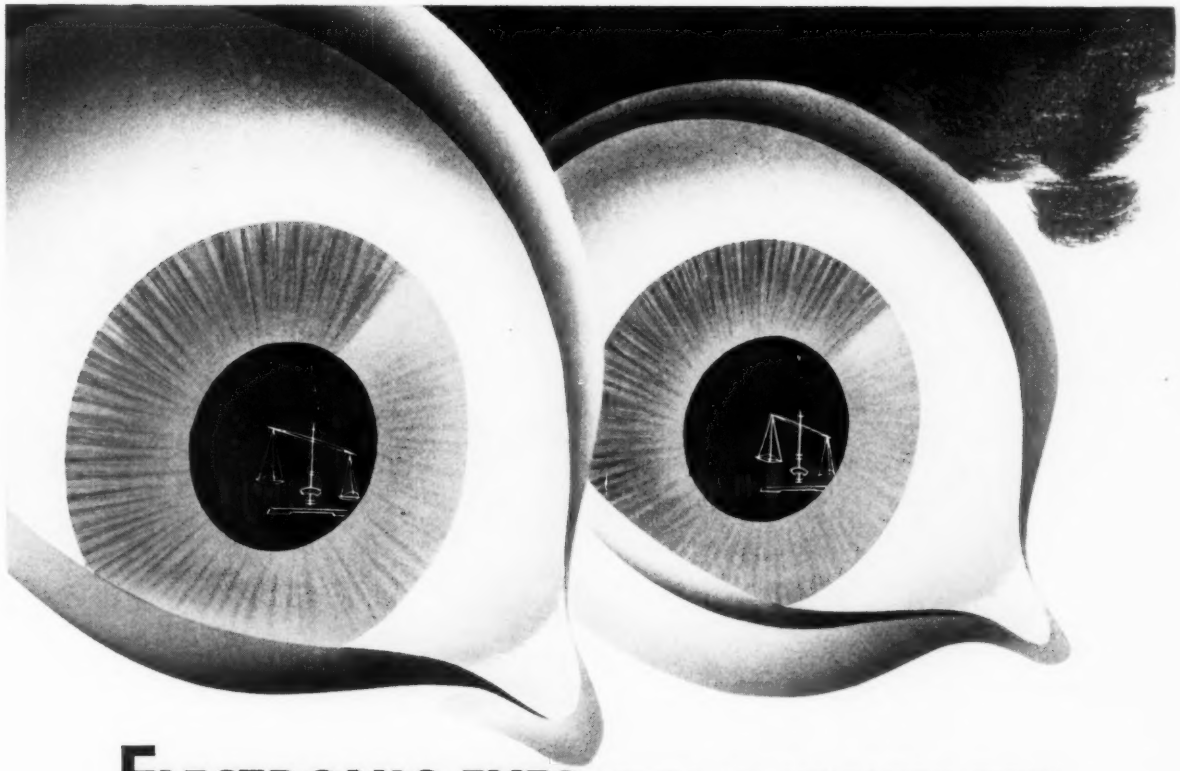
RM

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



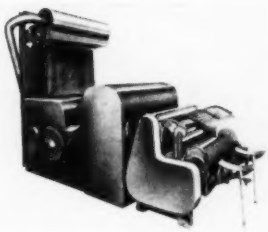
Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Bowling Balls RM 419



ELECTRONIC EYES (SEEN AT ATLANTIC CITY) CONTROL THE BLENDING OF SYNTHETICS

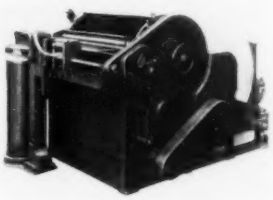
World's first line of machinery designed for blending rayon and synthetics achieves 0.7% accuracy

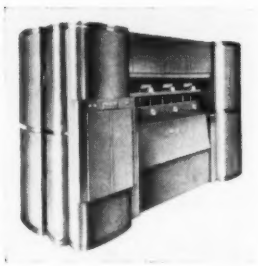
WITHOUT FIBER DAMAGE baled material is opened and combed on the high-speed spiked lattice of the Lattice Opener. The small tufts formed are pneumatically stripped and fed to the next machine on demand.



INTENSIVE OPENER'S electronic eye controls the delivery from the Blending Machine. A Licker-In type beater is pneumatically stripped and the fibers are condensed to build a sheet which is calendared into a uniform undamaged lap.

PARALLELIZED SLIVER, appearing to have already been once through a drawing frame, is formed by the unique carding action of the Lap Converter. Final blending accuracy is 0.7% with a waste loss of apx. 0.25%. Full data is available.





FOUR METERING CHUTES of the Blending Machine, with electronic eyes, control the feeding of the constituent fibers from each of the lattice openers. Delivery rollers on each chute meter the required amount of fibers to hold the blend constant in the next machine.

PLATT BROS.
SALES LTD. OLDHAM, ENGLAND

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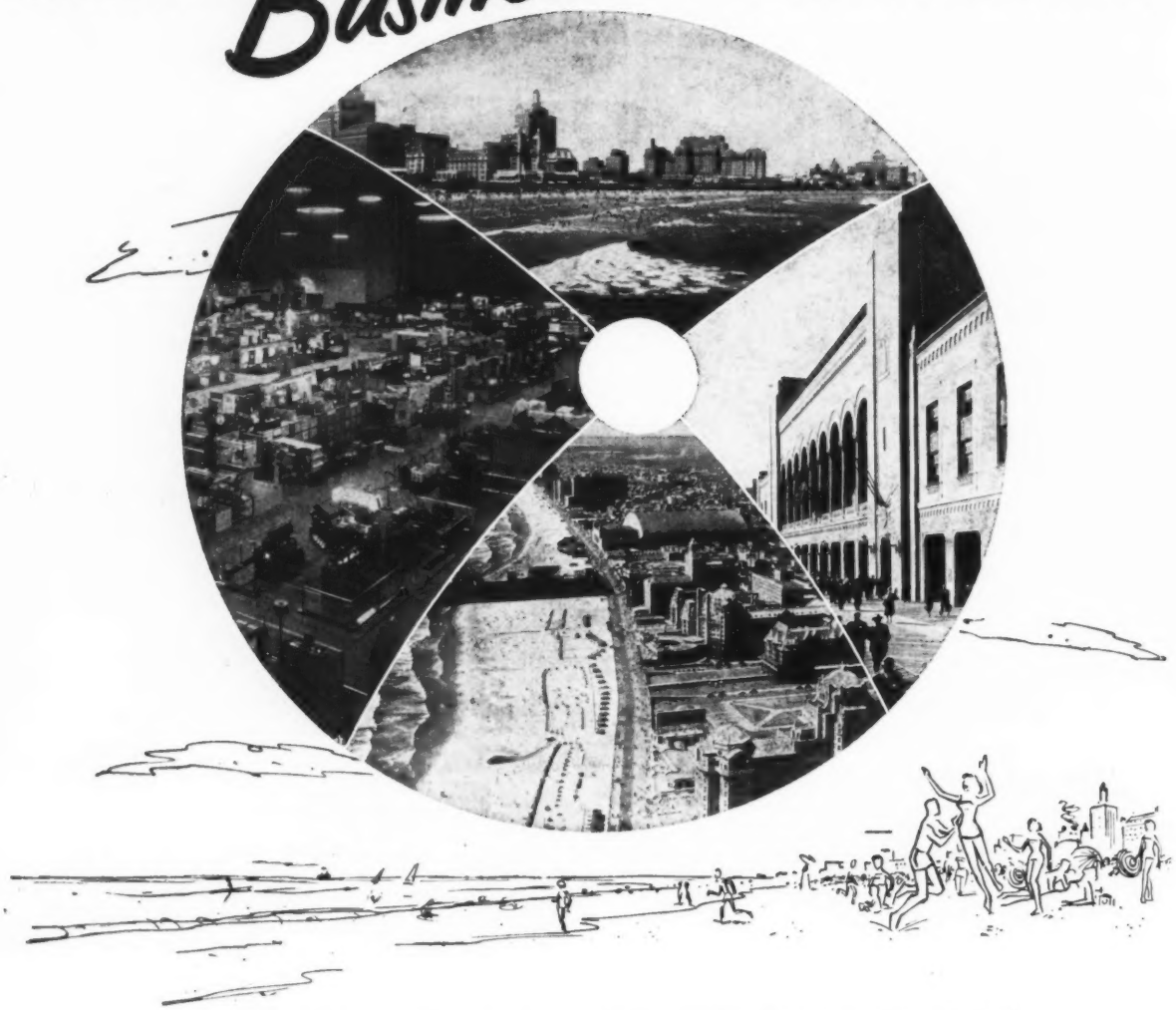
MAKE *Business* A PLEASURE!



- - - and it will be a pleasure to do business in Atlantic City. Fine restaurants, fabulous hotels, and the famous Boardwalk, adjoin the Atlantic City Auditorium. In this world-famous Exhibition Hall is being staged the 1954 American Textile Machinery Exhibition. In such a setting, this largest and most complete display of Textile Mill Machinery ever planned, will surely make your visit not only pleasant but profitable.

Combine business with pleasure — keep abreast of progress in the Industry — plan now to attend the American Textile Machinery Association Exhibition April 26 - 30, 1954 and see the most modern in Textile Mill Machinery actually in operation.

Make your hotel reservations early through The Housing Secretary
16 Central Pier
Atlantic City, New Jersey

TEXTILE MACHINERY
AMERICAN ASSOCIATION
ATLANTIC CITY
APRIL 26-30
1954
EXHIBITION

American Textile Machinery Association Exhibition

APRIL 26-30, 1954, ATLANTIC CITY, NEW JERSEY

For additional details on the Exhibition itself write A. T. M. A. Press Bureau
Route 4 — Box 61
Vienna, Virginia

For more information, write direct or use Reader Service post card.

BOTH ARE OILS—

BUT ONE'S A MASTERPIECE!

In Lubricating Oil, too, there's no substitute for Quality!

"Look-alikes"—in lubricating oils as in oil paintings—can fool you. But they can't fool a machine. Famous Gargoyle oils prove this point.

You can copy the physical specifications of a Gargoyle oil, but you can't copy the 88 years of experience and skill that transform these specifications into products of unsurpassed quality. Vary the ingredients or the way they're compounded even slightly, and you wind up with an oil that, at best, may do no harm. But neither can it possibly bring you the benefits the original was designed to deliver.

This *inherent quality* is only part of the Gargoyle picture. With it goes the world's greatest lubrication engineering service. We analyze your plant machinery—work with your personnel to set up a complete program of *Correct Lubrication* that will improve your production, cut maintenance costs.

Why accept substitutes for *your* plant?

SOCONY-VACUUM

SOCONY-VACUUM

Correct Lubrication

FIRST STEP IN CUTTING COSTS!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

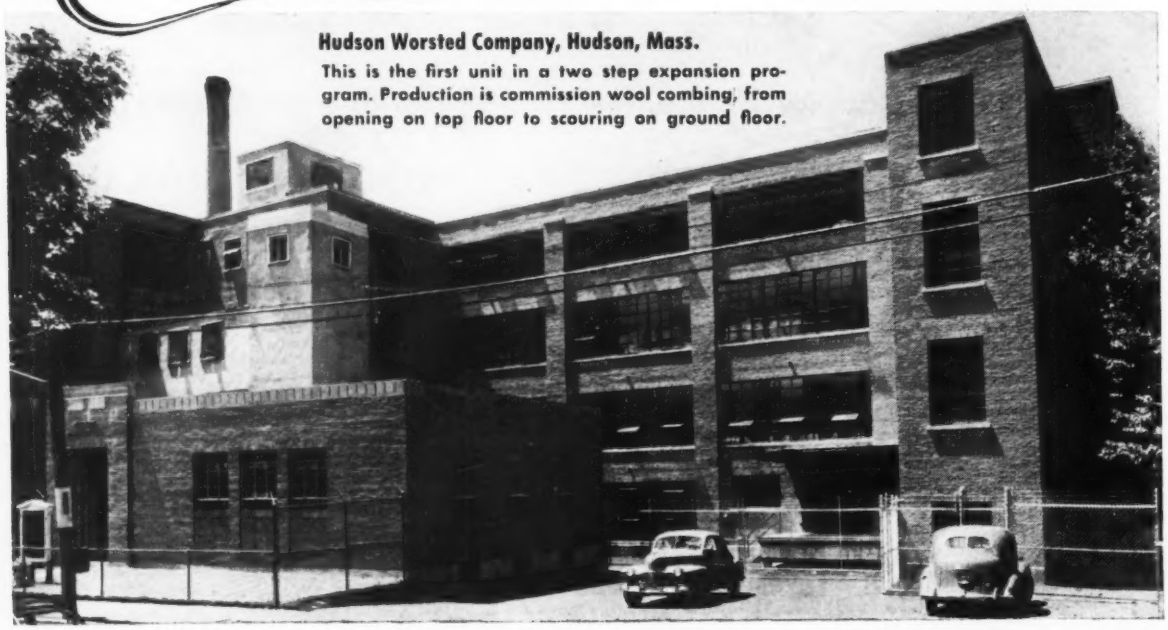
Branch River Wool Combing Co., Inc., North Smithfield, R. I.
A wool combing plant, built on the unit system, comprising four complete units. This company is an American subsidiary of the well-known textile firm of Amedee Prouvost of Roubaix, France.

LOCKWOOD GREENE
Projects
in
WOOLEN AND WORSTED

Lockwood Greene has completed over 500 engagements in the Woolen and Worsted field, and in the entire Textile Industry projects valued at more than three-quarter billion dollars.

LOCKWOOD GREENE
ARCHITECTS-ENGINEERS

BOSTON 9, MASS.	NEW YORK 20, N. Y.	SPARTANBURG, S. C.
40 Central Street	10 Rockefeller Plaza	Montgomery Building

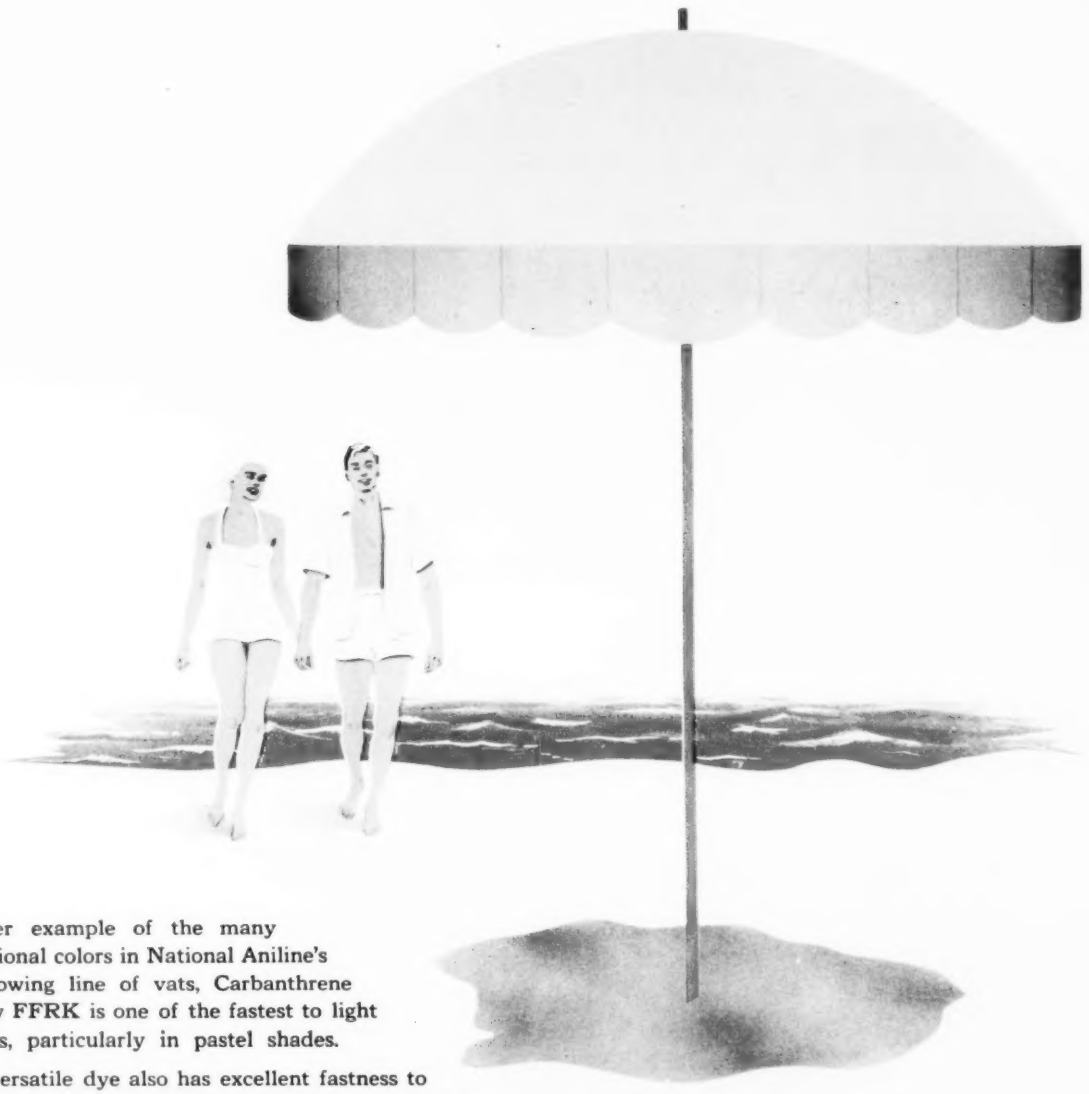


Hudson Worsted Company, Hudson, Mass.
This is the first unit in a two step expansion program. Production is commission wool combing, from opening on top floor to scouring on ground floor.

exceptional in pastels

for sun, surf and sports wear

NATIONAL CARBANTHRENE YELLOW FFRK PASTE



Another example of the many exceptional colors in National Aniline's fast-growing line of vats, Carbanthrene Yellow **FFRK** is one of the fastest to light yellows, particularly in pastel shades.

This versatile dye also has excellent fastness to washing, boiling, soap, fulling, perspiration, water, seawater, peroxide and chlorine, bleaching and stoving. It is, therefore, applicable to all types of cotton and viscose dyeing and especially to yarns that are subsequently to be mercerized, cross-dyed, or bleached. Naturally, it is excellent for beach and sports wear.

Phone our nearest office for working samples of Carbanthrene Yellow **FFRK**, for technical help on any difficult dyeing problem or for prompt delivery on your routine dyestuffs needs from warehouse stocks.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco
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Columbus, Ga New Orleans Chattanooga Toronto

Allied Chemical

Electronic spacer patterns guide stockpile through sequence of cuts automatically. Responsive Oilgear

L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

BUSINESS ESTABLISHED 1840

Electronic spacer patterns guide stockpile through sequence of cuts automatically. Responsive Oilgear Transmission provides speedy travel with pin-point stopping within 3/1000ths of an inch from zero tolerance. Lawson Cutter also used in repetitive single cuts and for trim on sides. Photo in plant of Liedtke Brothers, Chicago.

The RESULT?

Accuracy just 900% better

Production increase 50 to 500%

Over and over and over again, Oilgear Fluid Power proves to be the right solution to a drive problem. Take the case of the Lawson Cutter.

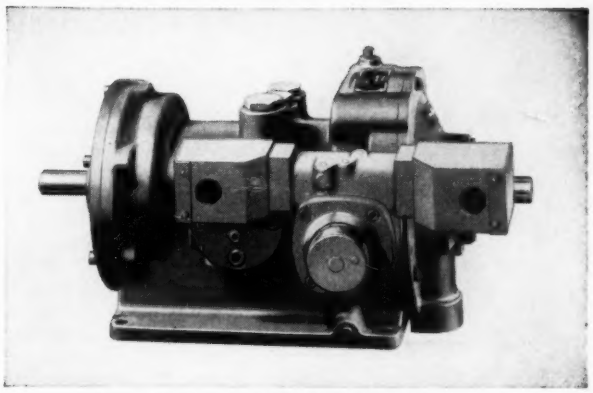
If precision is emphasized anywhere, that "where" is the field of fine color printing of every description. Money, time, effort are spent that art be right, that plates be right, that printing be right—to a hairline. And then comes the cutting operation where all that has gone before is saved—or wasted. Small wonder that cutting remained a hand operation for many years.

But the E. P. Lawson Company, manufacturer of cutting machines, wanted to modernize and mechanize the operation. Its designers turned to an electronic spacer device. This if anything would give precision in marking *where* to cut. But the next problem was to find a power drive capable of *obeying* the orders the electronic signal system was capable of *giving*. Lawson tried one type of drive. It varied all over the map. Lawson tried another type of drive. It was fairly accurate —but did not hold up.

Finally, as so many machine designers have done, Lawson turned to Oilgear. And there, as so many machine designers have done, Lawson found the answer to its problem.

The answer? Undeviating accuracy within 3/1000ths of an inch from zero tolerance—just 900% better than what had been achieved in the past; speed, translating into production increases of 50% to 500% month in and month out. How? Through the absolute responsiveness of Oilgear Fluid Power Drive to the automatic control system. Immediate, shockless acceleration to full speed "forward". Precise measured slowdown as the feed fence nears the target. Precision stopping "on target" for the cut and then rapid acceleration toward the next cut.

Here again is an example of the superlative "rightness" of Oilgear Fluid Power "generators," motors, transmissions—for almost any type of installation or machine requirement, big, little, and all those in between.



Oilgear Two way Variable Speed Transmission as used on Lawson Electronic Spacer Cutters. These drives also provide unlimited speed range from zero to maximum. Speed changes made in split second or specified time.

Chances are Oilgear is *the* solution you've been looking for. And Oilgear engineers will be just as quick to tell you if Oilgear is *not* for you. Ask for further information from an Oilgear Engineering Representative. No charge. No obligation. THE OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wisconsin.

OILGEAR

OILGEAR

Setol Cleanser HAS WHAT IT TAKES TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine

Finnell 213P Scrubber-Vac

Applies cleanser, scrubs, and picks up — in ONE operation!

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents — less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1903 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

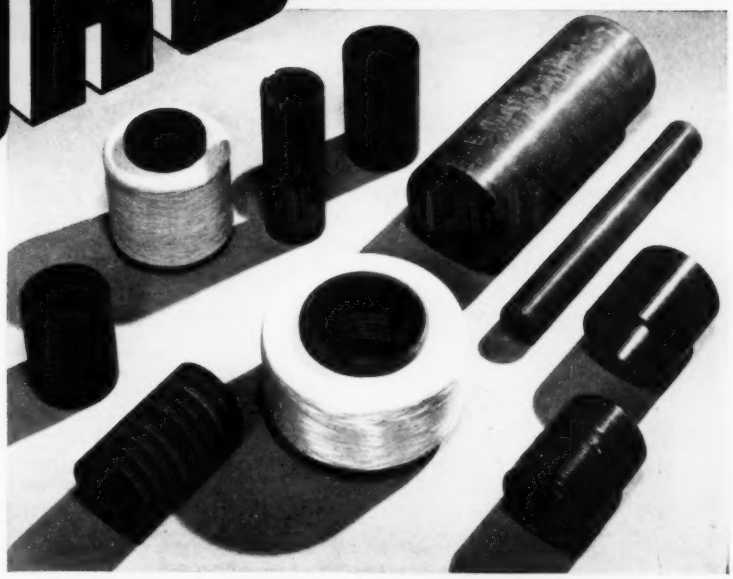
Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

Note again is an example of the superlative "right."

The Entire Textile Industry is Talking About The REVOLUTIONARY SONOCO DUROWELD PROCESS



Can be supplied with various surfaces — smooth, rough, flocked, scored, knurled. Ends can be colored for identification.

- DACRON TUBES
- BOBBINS
- TWISTER TUBES
- SPOOLER SLEEVES
- CHEESE CORES
- NYLON SIZING CORES
- LAP ROLLS
- PERFORATED DUROWELD TUBES
- and many other possible uses!

And there's good reason, too! DUROWELD by SONOCO, at last gives the industry a tough low cost, reusable carrier — capable of withstanding the high speed of today's modern equipment.

DUROWELD means we can now produce radically new and different carriers with micrometer tolerance and true balance.

Are you having carrier problems? DUROWELD may be the answer! Our sales and engineering departments would be happy to discuss the matter with you.

TEXTILE MACHINERY EXHIBITION — ATLANTIC CITY — APRIL 26 TO 30 1954 — AMERICAN ASSOCIATION

See DUROWELD Products on display in our Booth - No. 71-72.

Sonoco Products Company

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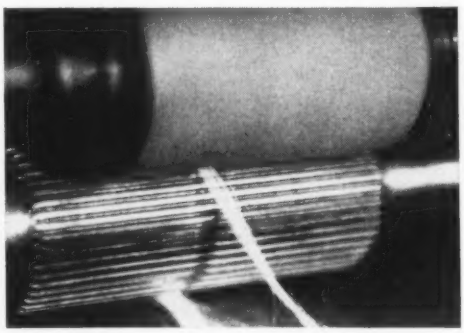
DEPENDABLE SOURCE OF SUPPLY

sonoco — SERVES THE WORLD — PAPER CARRIERS — REG. U.S. PAT. OFF.

Tests like these showed mill men Armstrong's NO-742-S Cots

STOP SERIOUS



WITH REVOLVING CLEARERS, USE THE LAP-RESISTANT J-490 COT

For spinning fine yarns, and for any count yarn with revolving clearers, Armstrong's J-490 Accotex Cots are used in thousands of mills. Special electrolytes added to the J-490's long-wearing synthetic rubber composition make it highly resistant to lapping. The J-490 runs exceptionally clean, too—it's not affected by oil, dyes, or commonly used textile solvents. If lapping's a problem, call your Armstrong man today and arrange for a test side of these lap-resistant J-490 Accotex Cots.

THREE YEARS of testing and experience in mills all over the country prove it: you can eliminate even the worst eyebrowing with Armstrong's newest Accotex® Cot, the NO-742-S.

Here's what mill men who have tested the NO-742-S say. "Your new cot," reports one supervisor, "cleared up a bad eyebrowing situation in my spinning room. Now, with normal picking and buffing schedules, you can't find an eyebrow in my spinning room."

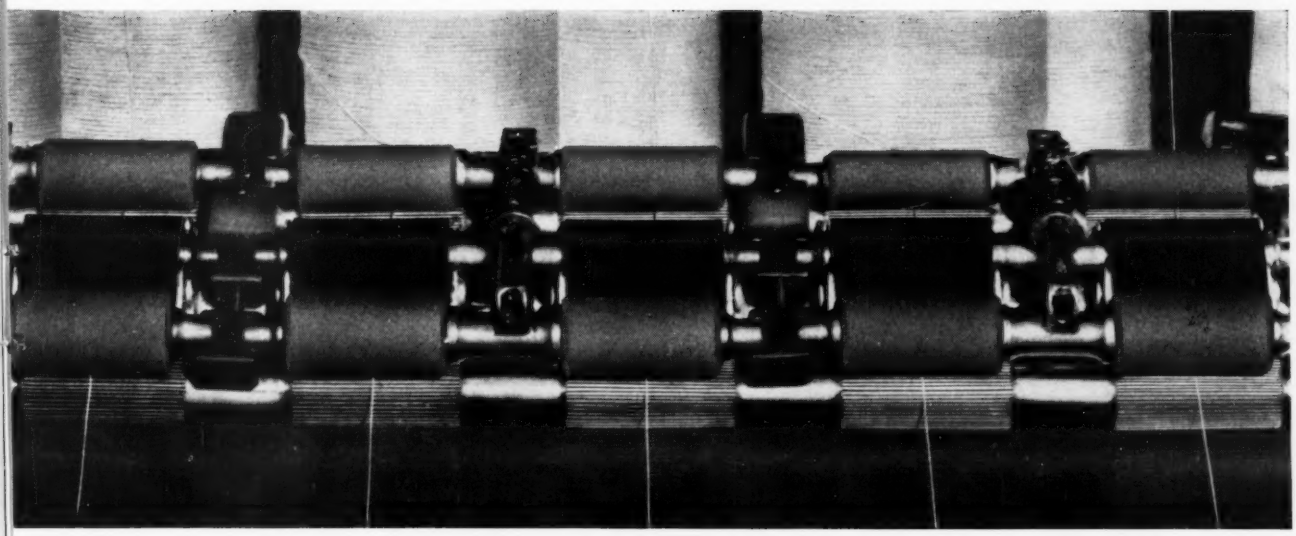
An overseer reports, "After the test had been running a few months, I could tell which rolls were covered with those new cots without even lifting the clearer boards. When all the others had eyebrows, the NO-742-S cots didn't."

Only one re-buffing per year. A third mill man likes the low operating cost of NO-742-S cots. "I'm amazed they run so clean and so long without slicking or glazing. In fact, we only have to re-buff them once a year."

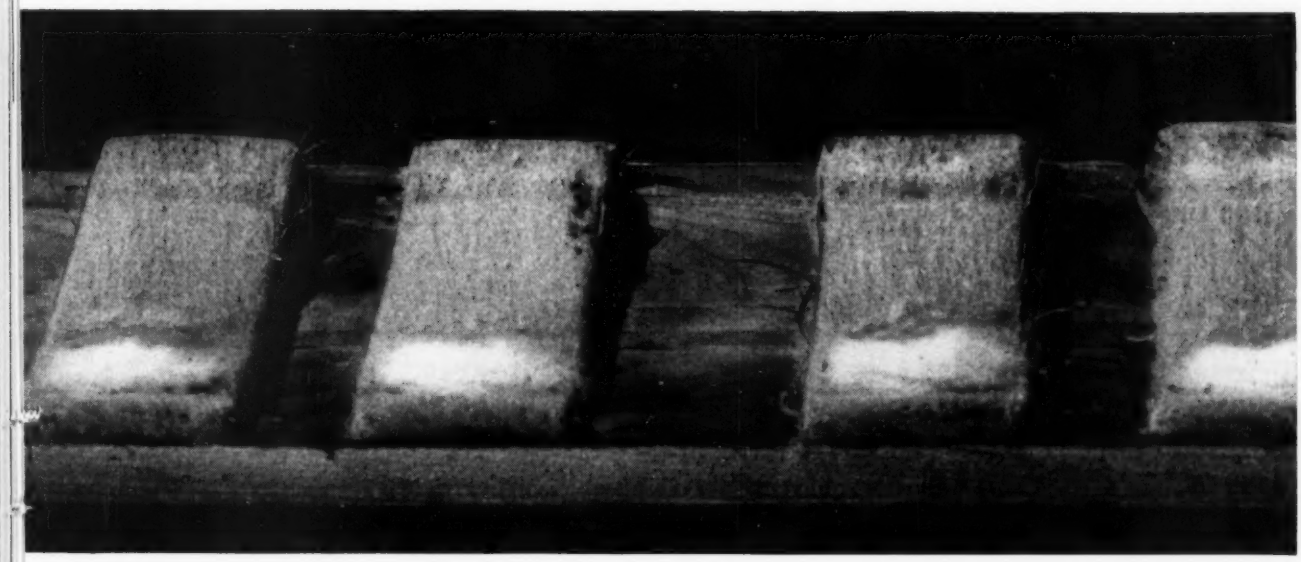
If you haven't seen an NO-742-S cot yet, ask your Armstrong man to show you one. In your hand, you can see and feel the "bite" of its unique drafting surface. It's this "bite" that packs waste well back on the clearer felt. That's the secret of the NO-742-S and its success in eliminating eyebrowing.

If you have trouble with eyebrowing in your spinning room, try a test frame of this newest Armstrong cot. Call your Armstrong man or write Armstrong Cork Co., Textile Products Dept., 6503 Dauphin St., Lancaster, Pa. Available for export.

ARMSTRONG'S



EYEBROWING

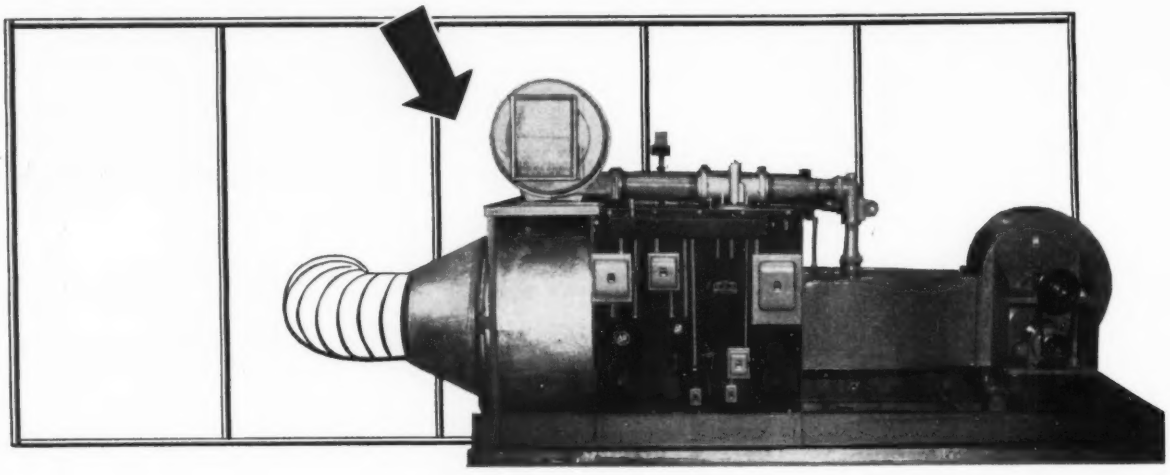


Here you see why mill men are so enthusiastic about the eyebrow resistance of Armstrong's NO-742-S spinning roll cover. This clearer board was removed from a spinning frame when it was time for normal picking. Waste has been packed well back on the clearer where it can't drop off. These Accotex Cots had been running on 30-count yarn over six months without re-buffing when this photograph was taken.

ACCOTEX COTS • • NO-742-S • J-490 • NC-727 • • • •

GET 500° IN YOUR OVEN

This Easy Inexpensive Way!



The new Carbomatic PYRO-JET is a soundly engineered heat generator that gives the high temperatures you need for faster drying or resin curing. It's a gas-fired, jet type, producer of convection heat — available in many sizes to suit your exact BTU need.

The PYRO-JET is fed directly into any oven, drier or tenter housing. You may use it in conjunction with present heat or use it as the primary heat source. It comes in a dozen sizes from 500,000 to 10,000,000 BTU capacity.

An average size unit (2,500,000 BTU's) measures only 13' x 4' x 8' and weighs but 2500 pounds.

Write us today for the detailed facts.

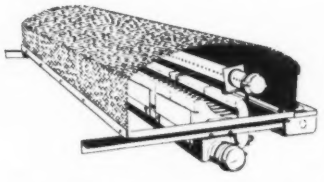
SILL INDUSTRIES
187 MAPLEWOOD AVENUE MAPLEWOOD, N. J.
distributor for
CARBOMATIC CORPORATION

representatives in:
CHARLOTTE • NEW YORK • LOS ANGELES
PROVIDENCE • CHICAGO • ST. LOUIS

If floor space is limited put it *on top* the oven. PYRO-JETS use any type of gas and fully meet all underwriter's requirements.

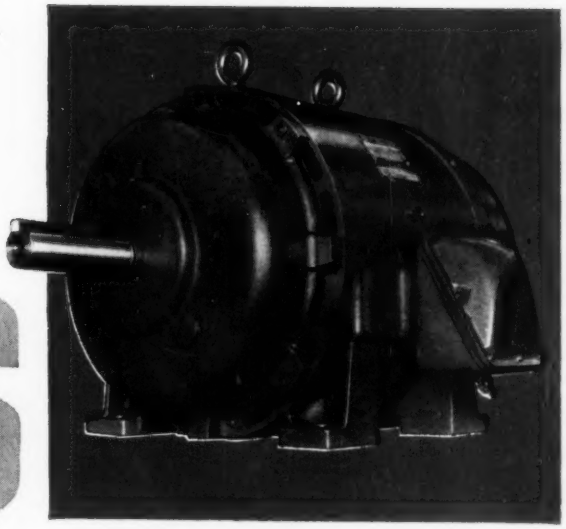
It's easy now to increase your drying or curing speeds from 20% to 50% — right in your present oven. PYRO-JETS solve your *major* heating problems with a *minimum* expenditure.

USE THIS INFRA-RED UNIT FOR RESIN CURING!
THE NEW CARBOMATIC "UNA-RAY" BURNER



This infra-red gas burner has a horizontal forced air jet riding over the flame. This gives a high-temperature *convection* heat. Directly over the screen there is high-temperature *radiant* heat. The patented UNA-RAY screen bars all carbon monoxide gas or uncombusted carbon particles from ever reaching your goods. This feature insures fast, safe, dependable curing.

"ALL MOTORS ARE NOT ALIKE!"



FOR RUGGED SERVICE, Reliance Motors are built better to last longer. These *Precision-Built* Motors combine maximum strength with shock-resistant frame and bearing-bracket construction. Write for Bulletin B-2101.

RELIANCE *Precision-Built* MOTORS

B-1470

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 Ivanhoe Road, Cleveland 10, Ohio • *Sales Representatives in Principal Cities*

 For more information, write direct or use Reader Service post card.

High-Speed knitting without

Profits in the knitting of full-fashioned stockings depend on speed *plus* continuous operation.

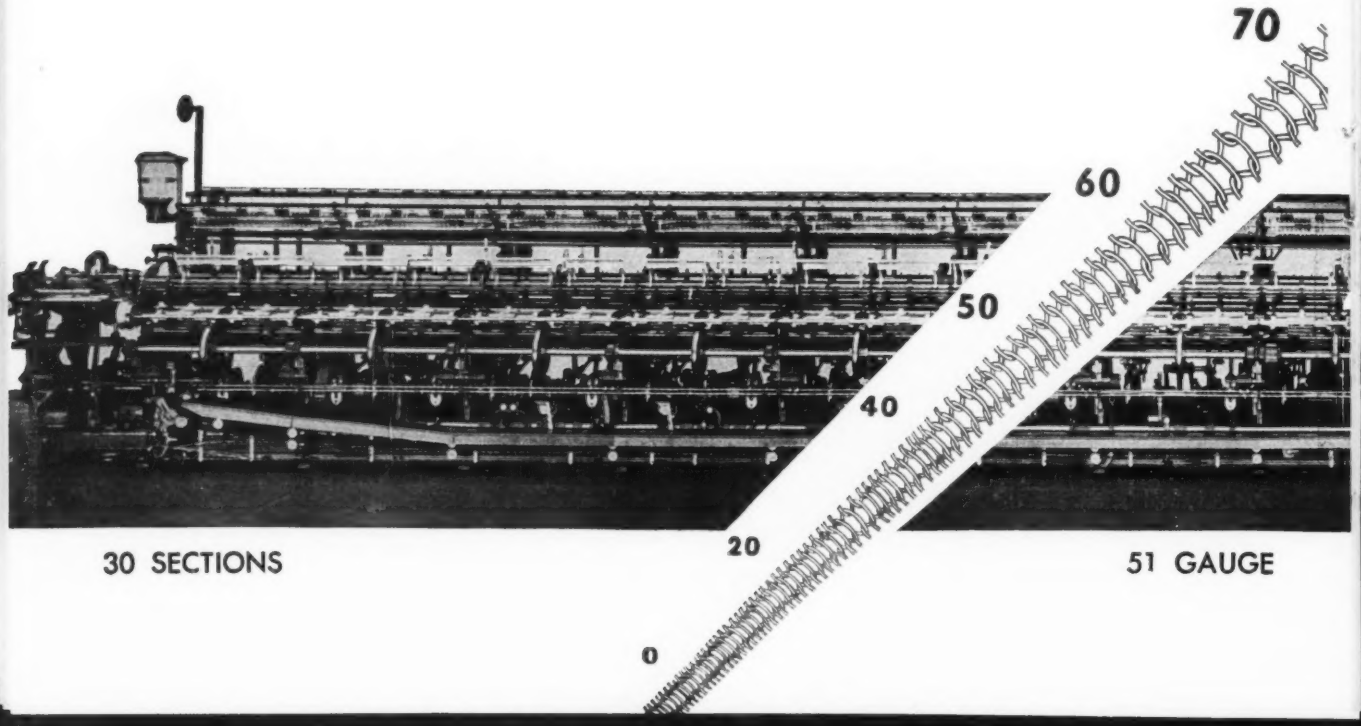
With the new "Reading 100" Full-Fashioned Knitting Machine, you get extra dozens of fine quality full-fashioned stockings.

You can rely on the "Reading 100" for steady performance at this high speed because it is engineered for vibration-free performance. Textile engineers spent ten years in the development of this completely new machine — perfecting cam motions, strengthening structural parts, simplifying operation.

Here are some of the results:

- High narrowing speed . . . End control with its rigid construction allows a narrowing speed of 75 courses per minute — faster than the top operating speed of some machines now in use.
- Simplicity of operation . . . Less time required for making or checking cam settings because all cam adjustments, except needle bar and balancing cams, are made at one point.
- Complete speed flexibility . . . The Automatic Speed Selector provides unlimited stations for making speed changes throughout the knitting of the blank.

Let us show you how the new "Reading 100" will help you to stay competitive by producing the finest stocking fabrics — without interruption — at speeds never before achieved. See the new "Reading 100" in operation or write us for full details.



interruption

100

95

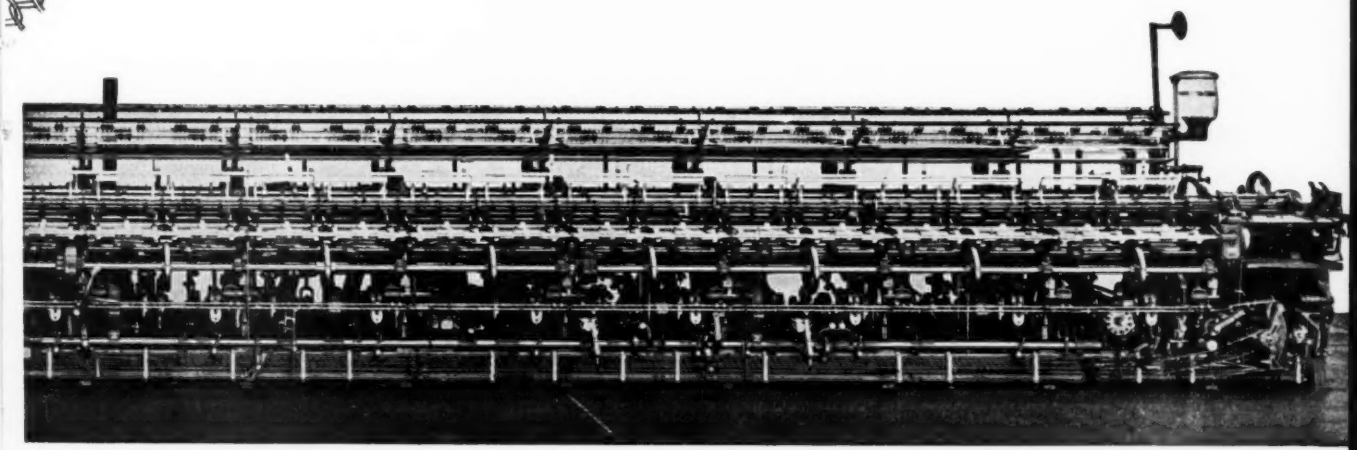
90

85

80

75

The "READING 100"
Full Fashioned Knitting Machine



60 GAUGE

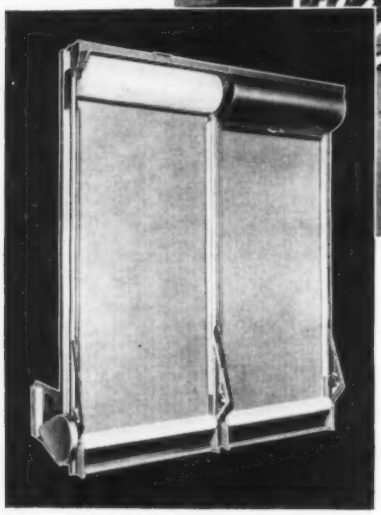
66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.

LINT TAKES A LICKING, HERE!

Mallett & Associates
Consulting Engineers
Jackson, Miss.

James F. O'Neil Co.
Contractor
New Orleans, La.



Interior view at Greenville Mills showing a portion of the 96 Auto-Airmat Lint Filters cleaning recirculated air from carpet weaving operations. Compact design of filters permits overhead installation to conserve floor space.

96 AUTO-AIRMAT FILTERS Assure Lint-Free Recirculated Air at Greenville Mills

Making carpeting by the mile presents a king-size lint problem—a problem that could result in a "fouled up" air conditioning system and many costly hours of overtime maintenance. But Greenville Mills, in planning their new Greenville, Miss., plant, found the solution in the AAF Auto-Airmat—the *only* filter that solves your lint problems automatically.

The Auto-Airmat not only collects the lint but cleans itself automatically. The Airmat media, installed in roll form at top of unit, moves downward on an endless screen and is rerolled at the base with its lint load. The rate and frequency of screen travel is automatically controlled by a pressure switch. The drive mechanism starts when resistance builds up to a predetermined maximum — and stops when sufficient clean Airmat has been introduced to reduce the resistance. It's just that simple. No expensive "week-end cleaning" to keep filter at peak efficiency—and the lint is wrapped up in the roll for easy disposal!

Lint on the loose from weaving, carding and spinning rooms can be controlled effectively with big savings in maintenance. For complete Auto-Airmat data, call your local American Air Filter representative or write for Bulletin No. 234.

American Air Filter
COMPANY, INC.
304 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

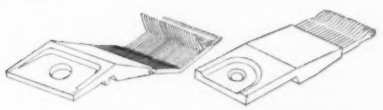
AAF

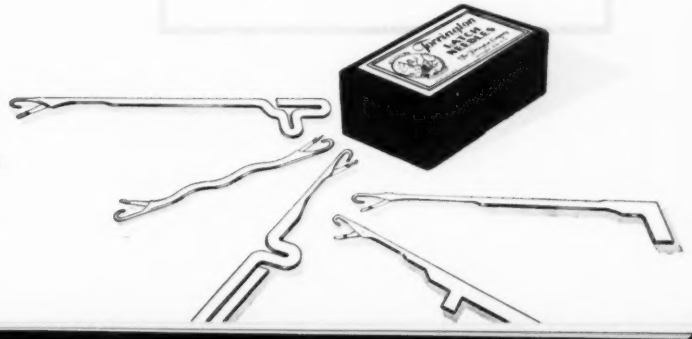
Background for quality knitting...

Behind the success of many well-known brands of knitted merchandise is the complete dependability, the day-in day-out quality performance of Torrington Needles.

A special advantage of Torrington Needle Service is the expert assistance of its technical staff, available to help you assess your needle requirements and improve knitting efficiency.

For Raschel and Tricot Machines, you can now obtain precision-mounted leaded units — made to Torrington Quality standards. Consult our nearest office for full details.





THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Boston
Greensboro, N. C. • St. Louis • Bedford, P. Q. • Toronto, Canada

Pacific Coast Representative:
E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif.
Broadgate House, 7-10 Eldon St., London E. C. 2, England

FOSTER MODEL 78

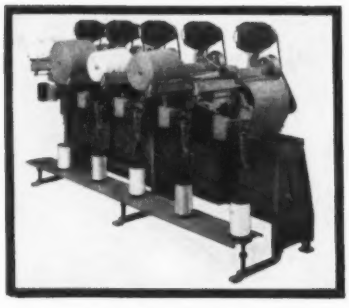
Heavy Duty Precise Wind Machine

This 51-lb. Cone of Rayon Tire Cord Is a Typical Product of Model 78

FOSTER MODEL 78 was designed for heavy duty work, such as winding rayon tire cord, sisal twine, sash cord, and heavy cotton and wool yarns. But its controls are so sensitive that it has also wound successfully 10 single cotton yarn to 31 lb. cones. Thus it offers wide adaptability as well as maximum package size and high production.

This machine has individually motor driven spindles, with push-button electronic slow start and spindle brake. Electric stop motion, with calibrated scale, assures accurate and uniform package size. It may be equipped to wind traverses from 6" to 10" and diameters up to 16", and will draw overend from bobbins or from swifts, reels or an unrolling device. It has no clutches or idler pulleys, and long drive belts are eliminated. It may be equipped with positive, gear driven gainer attachments or belt gainer which is easily adjusted for various yarn sizes. Easily positioned single weight adjusts pressure and pressure release mechanism. Spindles are mounted on ball bearings. In short, this machine utilizes every proven technological improvement.

For the complete story, write for Bulletin A-98A



FOSTER MACHINE COMPANY

WESTFIELD, MASS., U. S. A.

Southern Office: Johnston Bldg., Charlotte, N. C.; Canadian Representative: Ross Whitehead and Company Limited, 1475 Mountain Street, Montreal, Quebec and 35-37 King Street West, Toronto—European Representative: Muschamp Textile Machinery Limited Keb Lane Bardsley, Ashton-Under-Lyne, England.

NOW

the cheapest tallow-based synthetic detergent on the market

ANTARA is now offering a slurry-form IGEPON, a heavy duty detergent based on tallow that features outstanding detergency at lowest possible cost. For warm or hot water washing of wool, cotton and synthetic fibers, try this new "work-horse" IGEPON.

IGEPON TE-42, like other IGEPON T brands, possesses excellent stability to acid, alkali and hard water and has the same wide range of applications.

IGEPON TE-42 is especially recommended for kier boiling of cotton, soaping of vats and naphthols, print washing, wool scouring, hosiery boil-offs, one-bath dyeing and washing, scouring of woolens after fulling, and in any operation where high detergency is required.

Write today for technical data and a sample of IGEPON TE-42.

IGEPON TE-42

AVAILABLE IN BULK QUANTITIES

YOU CAN DO IT BETTER WITH AN IGEPON

gdc ANTARA gaf

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SALES OFFICES:
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American Textile Machinery Exposition

BOOTHS 339—340

Atlantic City, New Jersey

APRIL 26 - 30, 1954

HOWARD BROS.

Tuffer TRADE MARK **CARD CLOTHING**

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

Direct Representation in Philadelphia, Pa., *and in* Canada

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metalic Card Breasts Rewired at Southern Plants • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains.

B-6

"Lubricating Tenter Machines was a Tough Problem!"...

A large Georgia manufacturer of print cloth and gauze went to considerable expense to install a tenter machine in his mill. Knowing of the lubricating problems associated with units of this kind, he decided to call in Sinclair Lubrication Engineer, Lewis Kay.

Mr. Kay reports, "Upon checking the machine, I noted the chain slides would be working under conditions of extreme heat and moisture. Based on my experience, I reasoned that grease would not do a satisfactory job – so the suggestion was made to install the necessary fittings to use *oil*."

Mr. Kay continues, "I recommended Sinclair RUBILENE® H.D. because this oil is compounded to hold sludge and carbon in suspension while resisting the effects of high temperature and moisture."

"The results were highly satisfactory," says Mr. Kay. "RUBILENE has prevented any necessity for replacement of expensive chain links – there is no problem with sticking links and power drag is at a minimum."

Why not give a Sinclair Lubrication Engineer the chance to help solve your lubrication problem. *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

SINCLAIR LUBRICANTS

As never before...

Today we are all aware of the disastrous and far-reaching effects of a major industrial fire. Owners . . . management . . . employees . . . customers . . . almost every one suffers, in one way or another, when a serious fire strikes.

Could it happen to your plant? Now is the time to take a long, close look at your plant's fire protection measures. Remember, the local fire protection ordinances normally only set minimum standards. Compliance with these ordinances is no guarantee of fully adequate firesafety.

One way to be absolutely sure of the efficiency of your plant's fire protection facilities is to call in an expert C-O-TWO Fire Protection Engineer. He is ready and willing to help you with any or all industrial fire hazard problems.

There is a personal sense of responsibility inherent with C-O-TWO Fire Protection Engineers that assures you of fully adequate firesafety . . . a definite plus in your behalf. Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . C-O-TWO means top quality backed by experienced engineering that results in operating superiority for you at all times.

WHEN BUSINESS STOPS . . . INCOME STOPS!

Don't take chances with your investment. Secure the benefits of highly efficient fire protection engineering today . . . our extensive experience over the years is at your disposal without obligation. Get the facts now!

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MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY
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Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

1-hp, 1750-rpm, 550-volt, 3-phase Type APKL motors designed especially for loom service. Available in ¾, 1, 1½ and 2 hp at 1200 and 1800 rpm with or without flywheel. Left — ball bearing type; right — sleeve bearing type.

NEW

LOOM MOTOR

Exhaustive tests prove this motor sets new electrical and mechanical standards. Mill operators get lower maintenance and longer life because of: low temperature rise . . . large rotor inertia . . . large bearings . . . small speed pulsation.

Research to solve motor problems caused by rapid cycling of high speed looms has resulted in this new Allis-Chalmers motor.

The rotor has been made extra heavy and in the largest possible diameter to provide maximum flywheel effect (WK^2) to meet the new and greater demands on loom motors from the higher and higher loom speeds of the past few years. Under some conditions a flywheel is mounted on the motor shaft to provide still more WK^2.

This motor is available with oversize greasable ball bearings, or sleeve bearings packed with wool waste to keep oil in place. In case of over-oiling in the latter type, provision is made for excess oil to drain to the outside, thus preventing damage to windings.

Get Complete Details

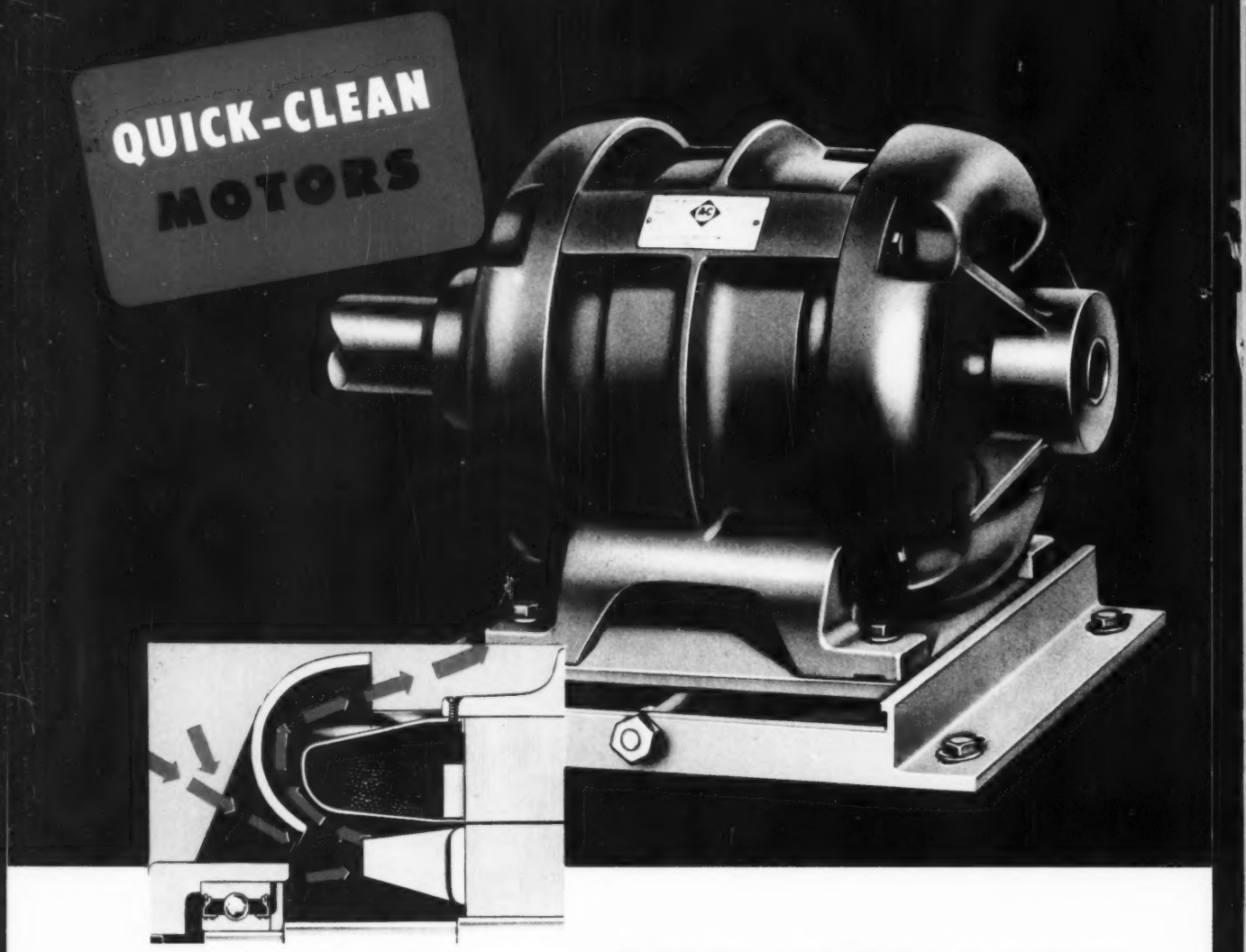
While this Allis-Chalmers loom motor is a completely new design from top to bottom, it has been in actual use in quantity for over a year. Get all the details on what this motor can do for your loom operation from your nearby Allis-Chalmers District Office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin and ask for Bulletin 51B7111.

Matched Allis-Chalmers Loom Switch
Specially built for starting loom motors. Designed to fit the starting requirements of the new Allis-Chalmers loom motor. Buy the easy, economical way. Get the complete power unit — both motor and starter — from one reliable source, Allis-Chalmers.

A-4297

ALLIS-CHALMERS

A-C ALLIS-CHALMERS



get the motor dirt and lint can't stop!

There's no motor problem caused by lint-laden atmospheres that can't be solved using *Quick-Clean* textile motors.

Powerful fans sweep lint and dirt through wide open air passages — and right out of the motor.

Sealed and pre-lubricated double width, single row, ball bearings are an important feature of the *Quick-Clean* motor. They will operate for long periods without attention of any kind. When motor is dismantled, they may then be cleaned and repacked. Inside face of bearing is protected from lint by a collar pressed onto motor shaft.

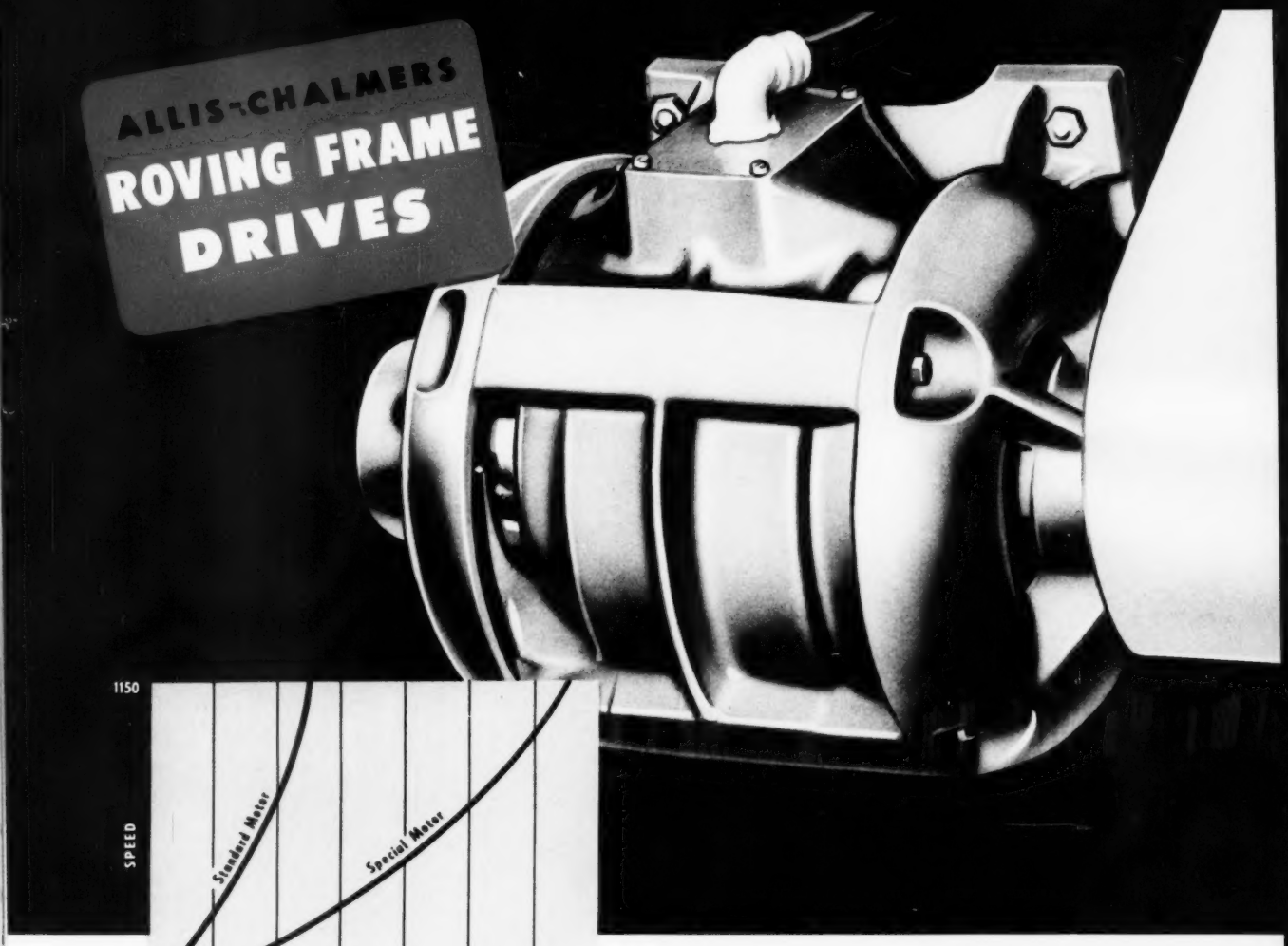
In addition Allis-Chalmers can supply control and *Texrope* V-belt drives to meet complete machine drive needs.

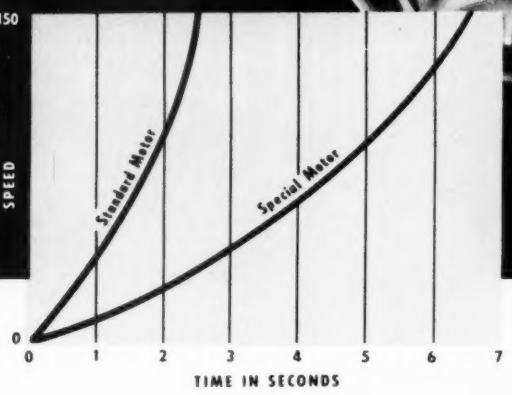
For complete information ask your Allis-Chalmers distributor, or district office representative.

ALLIS-

ALLIS-CHALMERS

ROVING FRAME DRIVES





slow starts, fine jogging —without special control

Slow, smooth acceleration, using Allis-Chalmers roving frame motor, reduces ends down, helps produce uniform roving. No special resistors — no acceleration reducing clutches — no special control is required.

Slow, smooth acceleration of motor (almost three times as long as a standard motor) provides e-v-e-n tension on the roving during starting periods. Special conduit box connections permit relatively high torque when required, such as during "break-in" period of the frame.

Quick-Clean frame design allows powerful fans to sweep lint and dirt in and out with the cooling air.

In addition Allis-Chalmers can supply control and *Texrope* V-belt drives to meet complete machine drive needs.

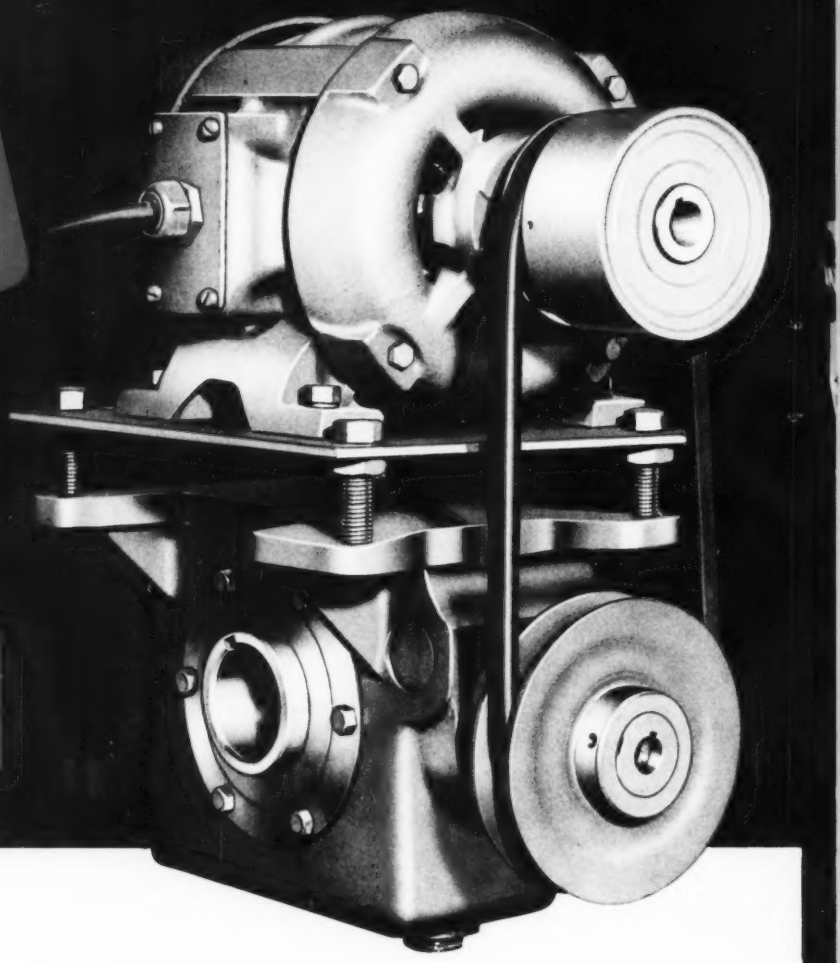
Call your Allis-Chalmers distributor or district office. Or, write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-C CHALMERS

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

CARD DRIVES



Quick-Clean motor drives gear reducer through *Texrope* V-belt drive and centrifugal clutch.

make your card room safer, cleaner, lighter

Today's trend is to individual card drives. Overhead line shafting creates problems in lighting, cleanliness and safety that are only solved by individual drives. In addition, usual duct arrangements for air conditioning are difficult with the overhead drive.

Allis-Chalmers combines a *Quick-Clean* motor, *Texrope* drive and highly efficient gear reducer to make a compact, reasonably priced power package for cards.

There's no need to move cards to install this drive. Unit requires practically same floor space as tight-and-loose pulley drive. It is mounted directly on card shaft — independent of the card arch — with torque arm to keep the gear box from rotating. No strain on card arch to cause vibration or distortion of air gap between flats and main cylinder.

Cuts maintenance, too! No heavy, expensive belts to replace . . . no periodic belt dressing. In addition, drive is practically vibrationless, increasing life of card and making it easier to keep in adjustment. There's also a special reversing starter for this drive to permit grinding the clothing. Get details from your nearby A-C district office or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51B7867.

Quick-Clean and *Texrope* are Allis-Chalmers trademarks.

ALLIS-CHALMERS

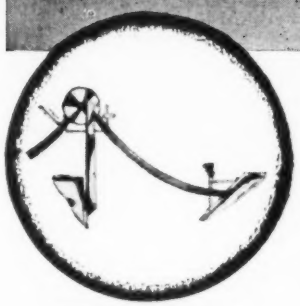
A-C ALLIS-CHALMERS

The Fleet Line

LAXLOOP CONTINUOUS WASHER

PAT. APPLIED FOR

With FREE-LOOP Electri-matic Compensator



FREE-LOOP Electri-matic Compensator, Bar Type — When two loops of cloth complete a low energy electrical circuit by coming in contact with two metal bars, corresponding tubs are synchronized.

FEATURES

A flexible vari-speed machine — stainless steel throughout.

Continuous washing and/or neutralizing of woolens, worsteds or blends at variable speeds.

Fully synchronized from tub to tub, giving tensionless fabrics throughout machine.

FREE-LOOP Electri-matic Compensator (patent applied for) controls DC drive for full automatic control.

Pneumatically operated rubber squeeze rolls.

Safety knock-offs prevent accidents to operators and materials.

Incorporates every device for automatic control of all elements involved in operation.

Positive counter-current flow, with constant uniform pre-determined liquor level in each tub. Made possible by R&L stainless steel flooded suction low head pump and adjustable weirs.

ADVANTAGES

Efficient high speed washing for all types of fabrics.

Uniformity piece to piece and set to set.

Extremely versatile, readily accessible, easy to maintain.

Considerable savings in labor, economy in water consumption and cloth handling.

See This Machine in Operation!
Booths 232 — 243, A. T. M. EXHIBITION, Atlantic City
April 26th — 30th

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

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Harold A. Zayotti, Jr., P. O. Box 125, Riverton, N. J. • H. A. Mott Co. Limited, Brantford, Ontario, Canada

OVER 400,000 IN USE

NO FAILURES

The strongest, lightest, best-balanced beams are Aluminum!

More than 400,000 lightweight aluminum warp beams are already in service—*without a single failure from deflection or crushing!* The extra strength of aluminum means reduced damage of fine, expensive fibers during processing and shipping. It means deflection is practically eliminated, and handling and stacking abuses are greatly overcome. Precision machining, plus fully heat-treated beam heads, makes aluminum warp beams stronger, lighter and better balanced than wood!

Warp Beams of Alcoa® Aluminum are supplied by leading beam manufacturers—including:

HAYES INDUSTRIES
MILTON MACHINE WORKS
HUBBARD SPOOL COMPANY
BRIGGS-SHAFFNER

For a complete run down on these cost-cutting beams, call your nearby Alcoa sales office—listed under "Aluminum" in the classified section of your phone book, or write: ALUMINUM COMPANY OF AMERICA, 2183-C Alcoa Bldg., Pittsburgh 19, Pa.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

ALCOA ON TV brings the world to your armchair with "SEE IT NOW" featuring Edward R. Murrow, Tuesday evenings on most CBS-TV stations.

Be sure to see WHITIN'S "BIG 10"

These machines can be seen in operation in Booth 180 at the

AMERICAN TEXTILE MACHINERY EXHIBITION

APRIL 26-30, 1954 · ATLANTIC CITY, N. J.

1 **Winder for Filling Bobbins . . .**
A completely new fully automatic high speed winder. Designed for maximum production and lowest winding costs.

2 **Roto-Drafter . . .** Introducing an entirely different type of machine for processing top on the American System. This is probably the most versatile textile machine ever produced.

3 **Roving Frame . . .**
A large roll roving frame with many significant special adaptations for use on American System.

4 **Spinning Frame . . .** A large roll machine with many new features, likewise purposely adapted for use as an integral unit of the American System.

5 **Up Twister for Tire Cord . . .**
An outstanding machine with a superb performance record, never before exhibited. Designed for heavy duty, high production tire cord twisting.

6 **Wool Spinning Frame . . .**
A new frame incorporating more than 20 features of great value, hitherto unavailable.

7 **Drawing Frame . . .**
A modern draw frame producing even high quality sliver for cotton or synthetic fibers.

8 **Roving Frame . . .**
A large package (12 x 6½) roving frame featuring the renowned Whitin Inter-Draft system.

9 **Spinning Frame . . .**
A large package, long traverse spinning frame with many important and substantial design modifications and improvements.

10 **Ring Twister, All Purpose . . .**
An outstanding heavy duty, all purpose twister designed for maximum production, low operating costs, and long life.

In addition to this machinery display, we will also have in Booth 24 (on the stage) an interesting exhibit of Repair Parts and Supplies.

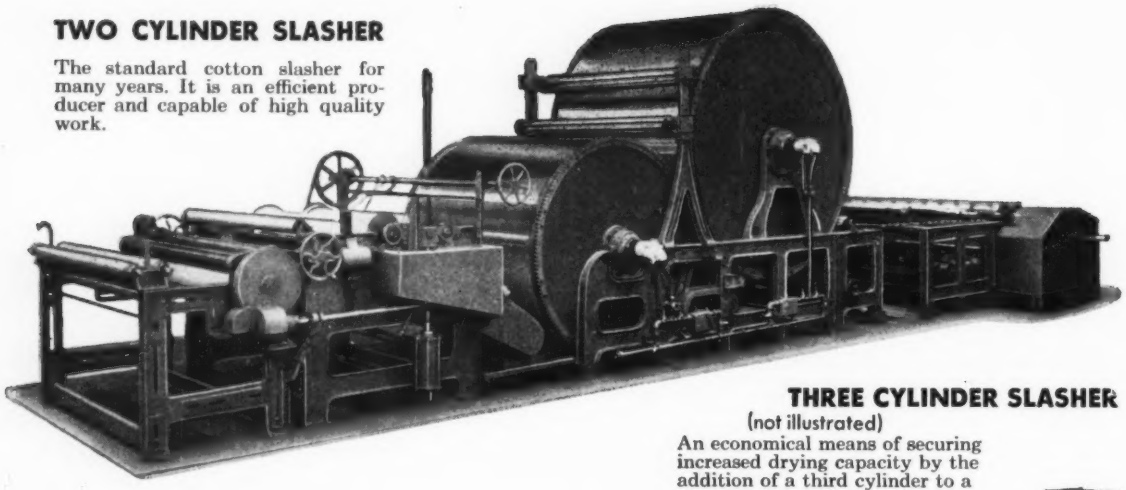
Whitin MACHINE WORKS

WHITINSVILLE · MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

TWO CYLINDER SLASHER

The standard cotton slasher for many years. It is an efficient producer and capable of high quality work.



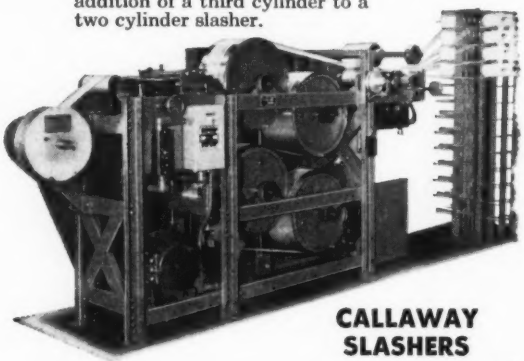
THREE CYLINDER SLASHER

(not illustrated)

An economical means of securing increased drying capacity by the addition of a third cylinder to a two cylinder slasher.

A Slasher To Fit Every Requirement

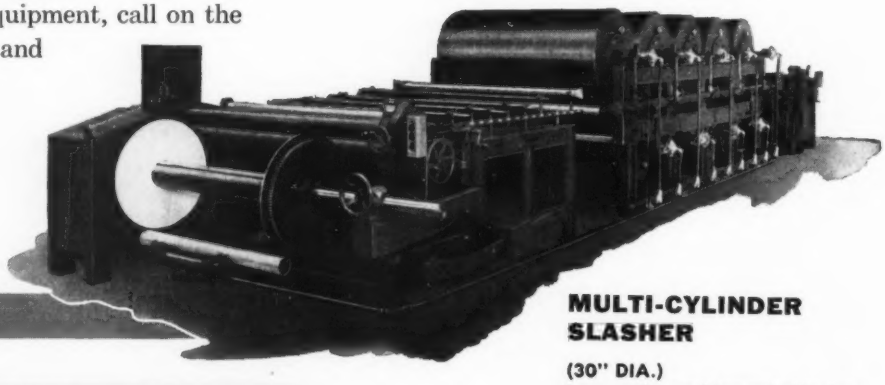
There's a WPF&M slasher for virtually every slasher room requirement . . . sample slashing or full production . . . the lightest gauze or the heaviest sheeting . . . natural fibers or synthetics. Whether you require a complete slasher installation, from size preparation to the finished warp, or modernization of your present equipment, call on the West Point Foundry and Machine Company—specialist in slasher room machinery.



CALLAWAY SLASHERS

Model 50 **Model 51** (illustrated)

Small, narrow-width machines capable of making full width warps for samples, testing, etc., using small amounts of yarn.



MULTI-CYLINDER SLASHER

(30" DIA.)

A versatile machine suitable for cut staple and filament yarns. Can also be used for cotton.

WEST POINT FOUNDRY & MACHINE COMPANY

WEST POINT, GEORGIA

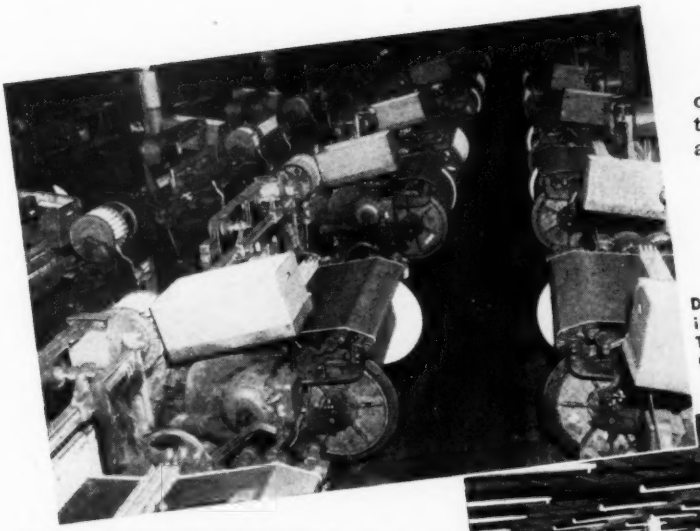
WRITE for SPECIFICATIONS

We will be glad to send you additional information on the 3 slasher units featured above and detail on the WPF&M Air-Dri, Cyl-Air, and Hi-Speed Slashers, without obligation.

Diehl POWER TRANSMITTER

is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.



Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant

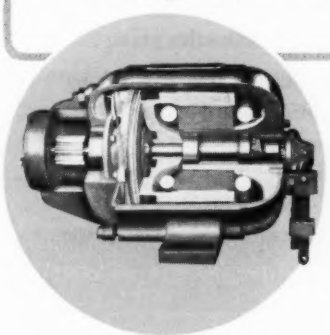
Draper XD looms operating with Diehl power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

MILL MEN ARE ENTHUSIASTIC ABOUT THESE FEATURES

- "Stored energy" for smooth, rapid starts and positive picking.
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
- Simplicity and ease of maintenance.

. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

We will welcome an opportunity to tell you—without obligation—how the Diehl Power Transmitter can bring these benefits to you.



This cutaway view illustrates the inverted construction of the power transmitter and shows the rotor which revolves around the outside of the stator on a hollow shaft—providing the essential inertia without the disadvantages of a separate fly wheel. Note the pinion driving shaft with attached clutch-plate which is shifted axially by simple lever at front end of motor, regulating clutch engagement pressure and providing controlled driving and braking action.

TEXTILE MACHINERY AMERICAN ASSOCIATION EXHIBITION ATLANTIC CITY APRIL 26-30 1954

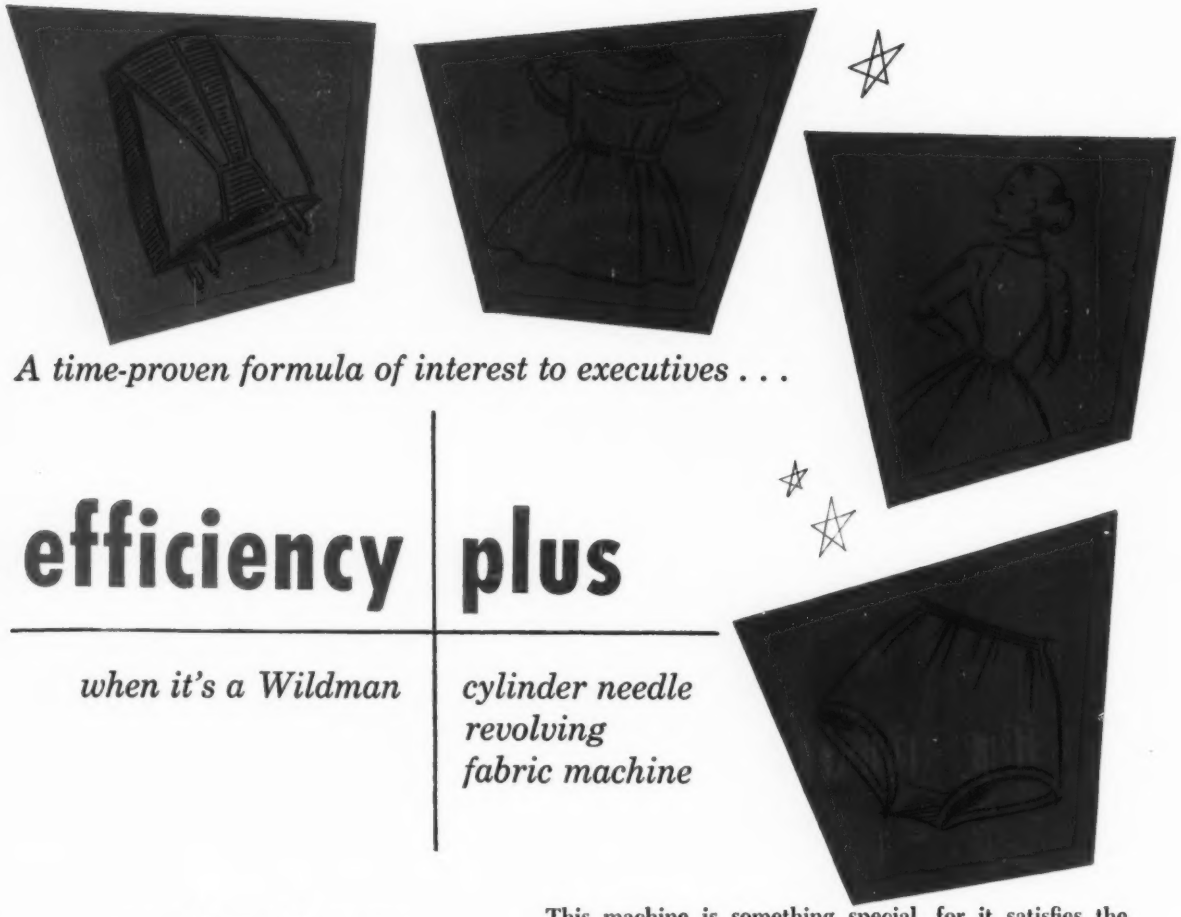
Visit us at BOOTHS 259, and 260.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

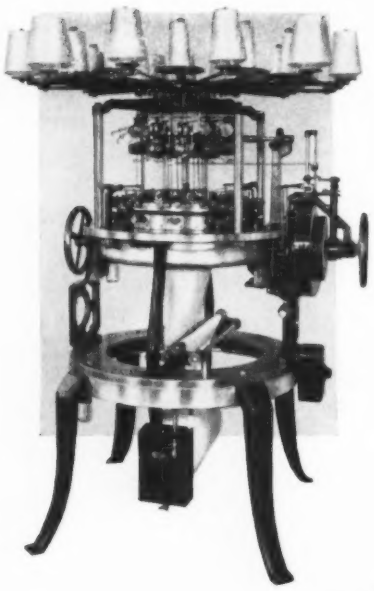
ATLANTA • BALTIMORE • BOSTON • CHICAGO • DETROIT • NEW YORK • PHILADELPHIA • WORCESTER



A time-proven formula of interest to executives . . .

efficiency | plus

when it's a Wildman | *cylinder needle revolving fabric machine*



This machine is something special, for it satisfies the needs of the production man, the sales manager, the manager — merchandisers aware of the present demands of the apparel market.

To sell the consumer, merchandise that fulfills a need and pleases the individual taste involves a complex knowledge and know-how — a special touch.

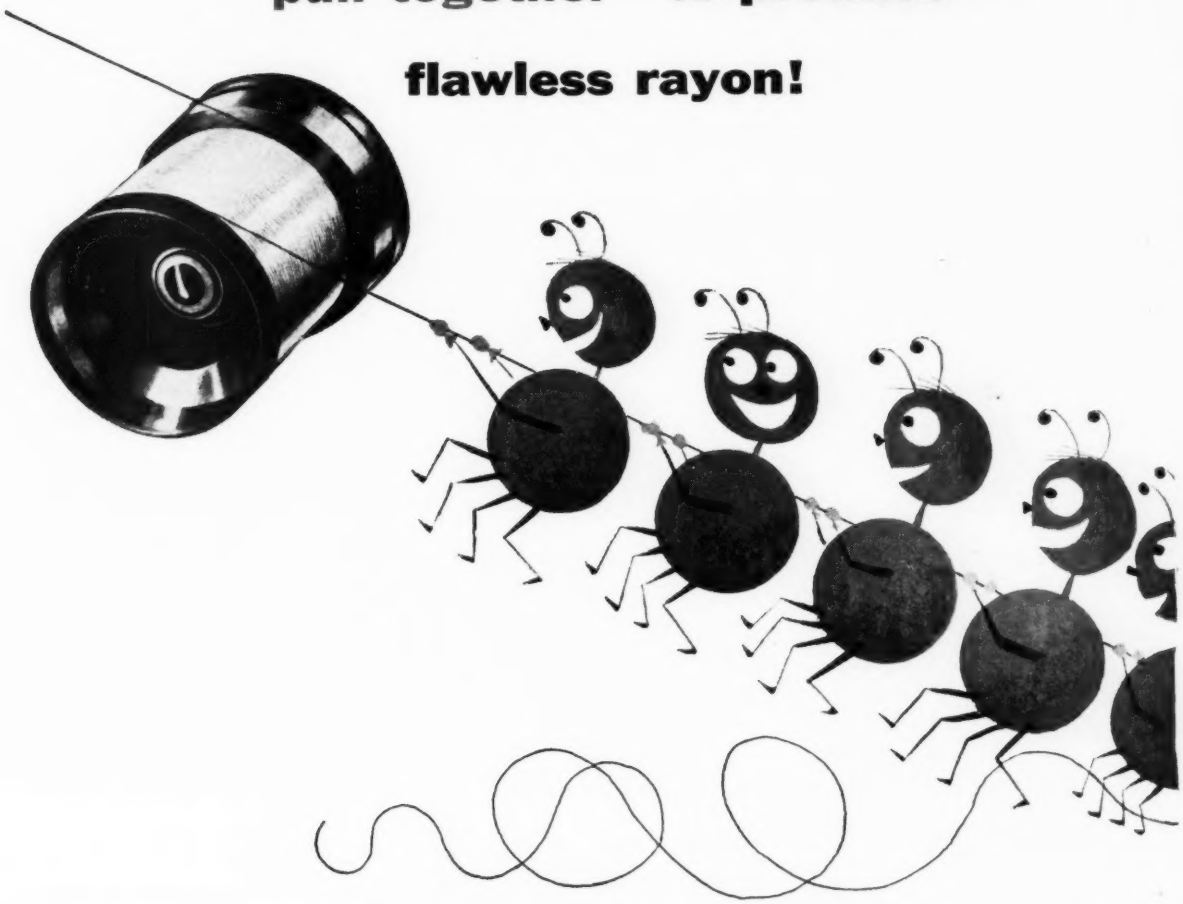
To get started right in production is a sound premise — and this machine will do just that for all departments, singly, or as an integral part of a complete sales plan.

Available in several styles for plain, tuck, float stitching — pattern, chain type for automatic stitch changes. Fabric production: underwear, outerwear, sportswear, beachwear, dress, nightwear, foundation, childrens', stockinet. Belt or individual motor drive. Now available in all sizes up to and including 30 inch with multiple feeds. Inquire today for complete information.

WILDMAN MFG. CO.
NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

More than 150,000 spiders "pull together" to produce flawless rayon!

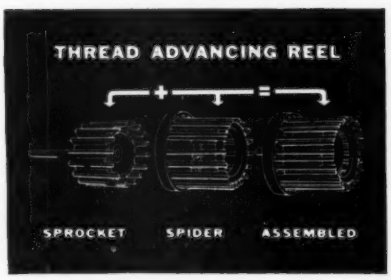


SYNCHRONIZED PERFECTLY in teams of thousands, the spiders of IRC's Continuous Process produce rayon yarn of unsurpassed quality.

IT'S THESE INGENIOUSLY ENGINEERED SPIDERS, essential parts of Industrial Rayon's famed thread-advancing reels, that carry the yarn automatically through every processing stage. No human hands touch it and bruise it. As a result, there is a minimum of knots and broken filaments.

MILE AFTER MILE, as a single strand, rayon is spun, bleached, washed, dried, treated and twisted in one sequence of operations. Inch-by-inch treatment makes possible uniformity in denier, strength and quality that ordinary methods never approach.

SAVED THE COST OF SECONDS and rejects due to chronic yarn imperfections, weavers have made IRC Continuous Process rayon yarn the standard of quality for quality fabrics.



IRC

Industrial Rayon Corporation

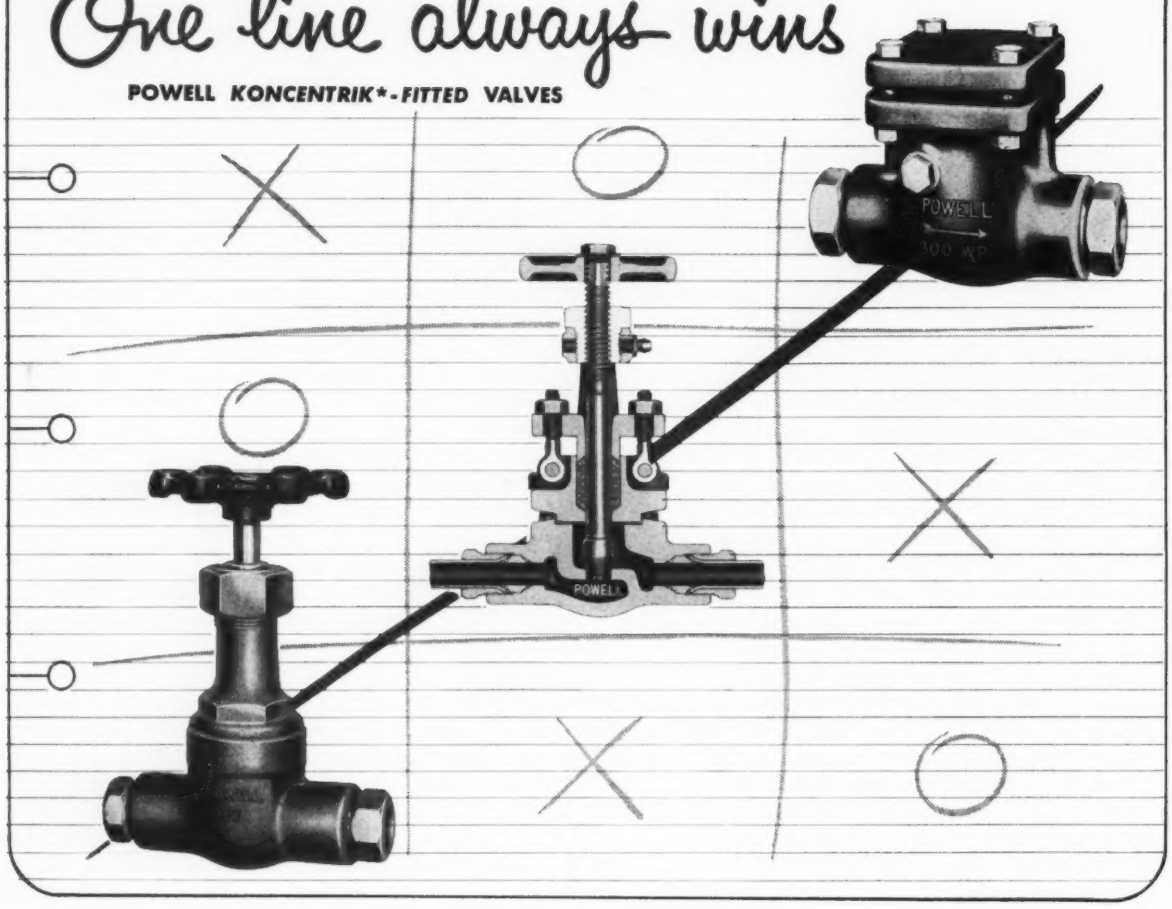
Cleveland, Ohio

Sales Office: 500 Fifth Avenue, N. Y. 36

 For more information, write direct or use Reader Service post card.

One line always wins

POWELL *KONCENTRIK*-FITTED VALVES



TOP

KONCENTRIK-FITTED 300-POUND STAINLESS STEEL SWING CHECK VALVE *(Fig. 2345-K).* Bolted cap. Metal or Teflon (on order) discs are hung on a 5° angle. For corrosion-resistant tubing up to 1" O.D.

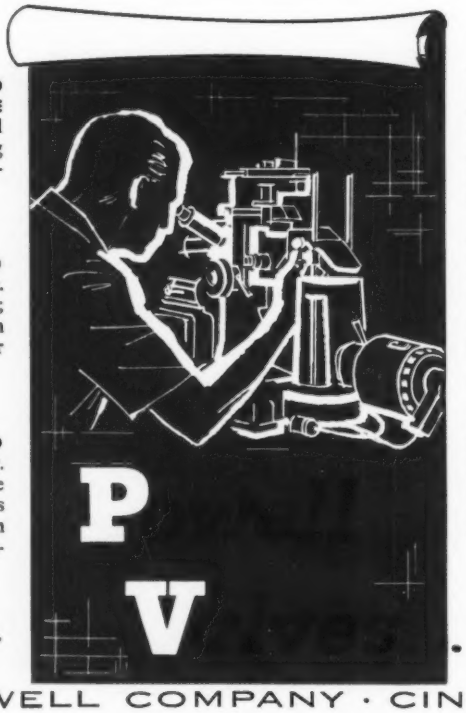
CENTER

KONCENTRIK-FITTED 300-POUND STAINLESS STEEL GLOBE VALVE *(Fig. 2446-K—Sectional).* Bolted bonnet; outside screw stem and yoke. Stem rises through bushing in upper yoke.

BOTTOM

KONCENTRIK-FITTED 200-POUND STAINLESS STEEL GATE VALVE *(Fig. 1832-K).* Screw-in bonnet, inside screw rising stem. Solid wedges regularly furnished; split wedges on special order. For corrosion-resistant tubing up to 1" O.D.

*Trade Mark Reg. U. S. Pat. Off.



You're always the winner when you choose Powell Koncentrik-Fitted Valves for positive leakproof control of corrosive fluids in corrosion-resistant tubing installations. They are especially adapted for instrument lines and for installations requiring thin wall tubing, such as Schedule No. 5 or 10.

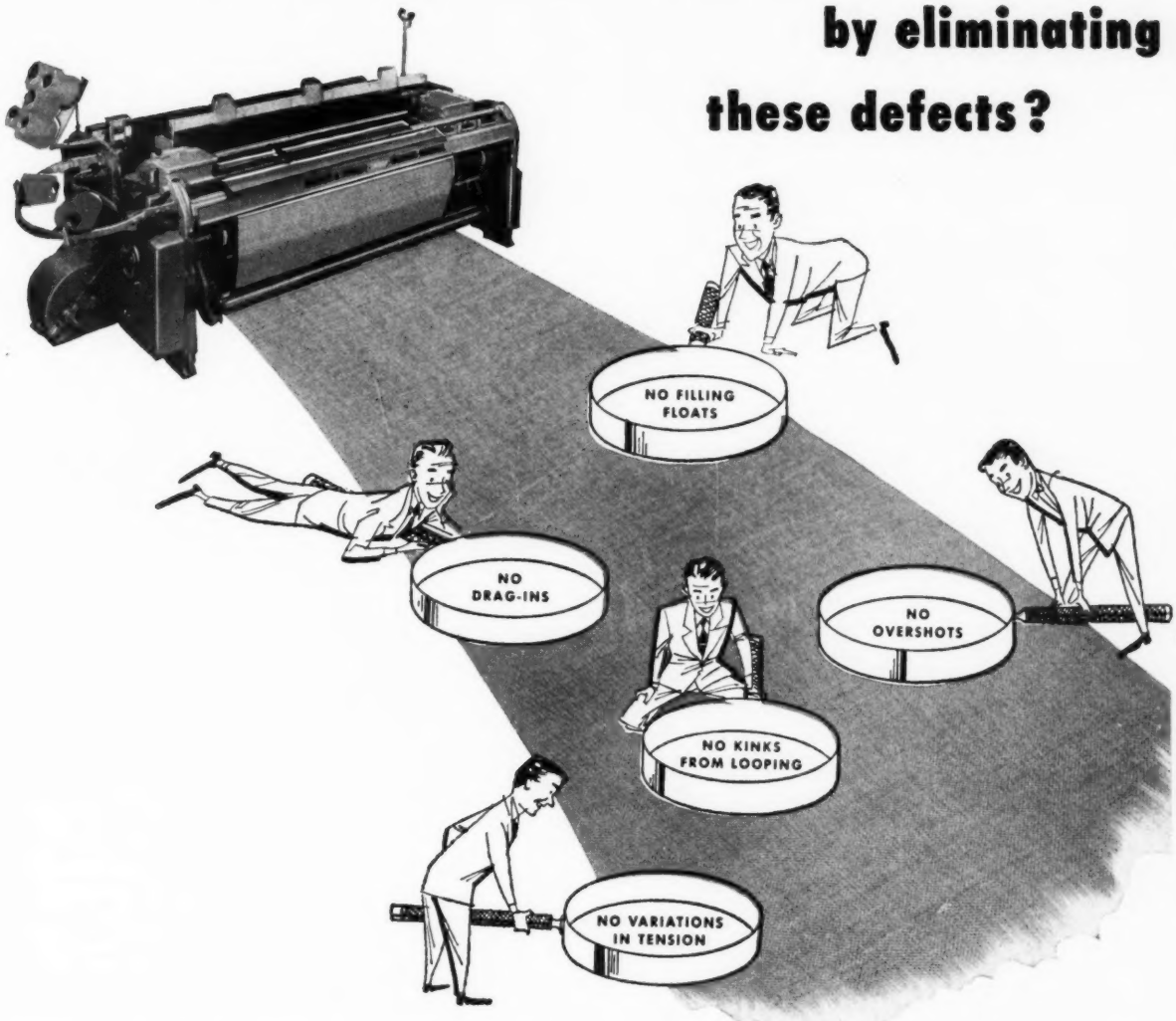
The William Powell Company has exclusive rights to use Koncentrik Fittings (the patented full floating seat and tube nut) in connection with Powell Corrosion-Resistant Valves. Based upon an entirely new principle in design, the pipe ends are designed to accommodate the seat and tube nut without the necessity of screwing separate fittings into the valve body.

Powell Koncentrik-Fitted Valves are available in Stainless Steel alloys (304, 316 and 20), Monel Metal, Nickel and Aluminum; and in a wide variety of types—Globe, Gate, Check, Needle and "Y" Valves. If a distributor is not located near you, write us for illustrated circular.

.....108th YEAR

THE WM. POWELL COMPANY · CINCINNATI 22, OHIO

How many "quality dollars" can you save by eliminating these defects?



WITH a Warner & Swasey-Sulzer Weaving Machine you can do away with *all* these costly defects, because this machine eliminates even the *possibility* that they may occur. It weaves more yards with fewer defects—requires less of the weaver's attention—automatically cuts mending costs and seconds.

It does away with all the problems of the conventional bobbin-shuttle combination. Small steel shuttles draw directly from a large filling package. There's no bobbin changing—no chance for defects like drag-ins. Its "pick-and-cut" action also eliminates kinks from looping.

Automatic tension control on the pick eliminates the tendency for variations in tension that often show up in fabrics. This control also minimizes the possibility of filling kinks from "live" yarn.

It has a positive cam-driven harness action—made of steel—that eliminates overshots from broken cords, harness straps or springs.

Take-up and let-off are also automatically controlled, giving a constant tension from beginning to end of the warp, providing a more even cloth.

Shuttles are guided through the warp—there's no possibility of filling floats, no danger of a shuttle flying out. And made of steel, these shuttles can't split or splinter and cause a bad warp breakout.

Here's a machine that builds profits with *greater production*, because it weaves faster—up to 240 ppm. And you'll realize additional profits because it's *quality production*—with far lower mending costs, far fewer seconds.

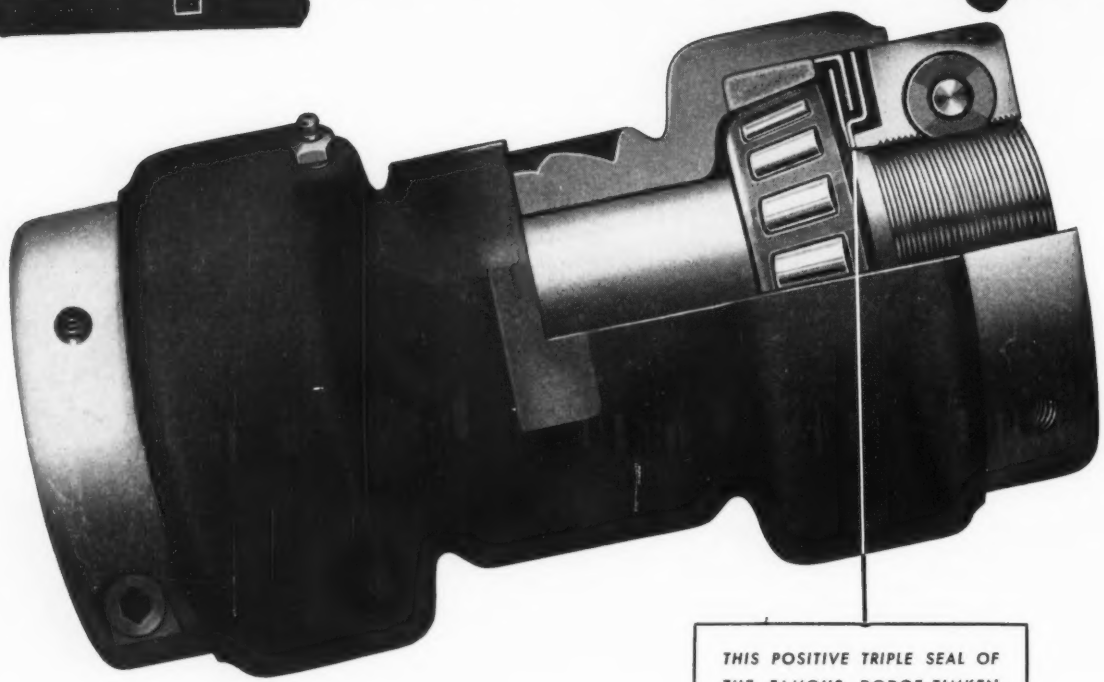
SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass. 6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Ga. 1820 Browning Ave., Charlotte, N. C.

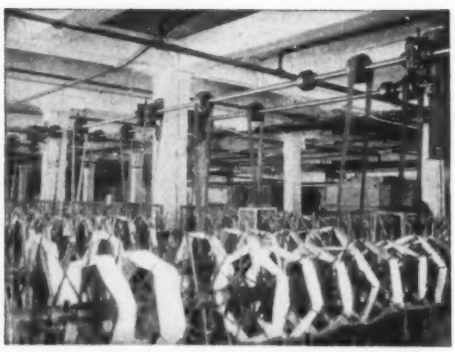
WARNER SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP... HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

DODGE MANUFACTURING CORPORATION
1400 Union Street • Mishawaka, Indiana

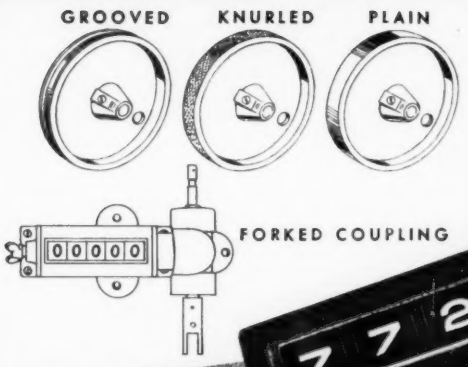
CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
of Mishawaka, Ind.

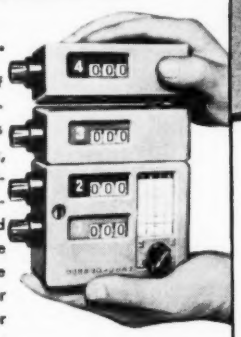
Here's the Rugged, Smooth-Running

Wheel-Driven Counter

you need for your mill

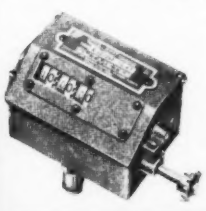


NOW'S THE TIME TO REPLACE COUNTER EQUIPMENT ALL THROUGH THE MILL . . .



New Design of 2-3-4 Convertible Counters . . . Pick, Hank, Yardage or Knitting . . . are easier to read and reset . . . give you a new lease on long counter life. Replace your obsolete counters with new and improved V-R Convertibles.

Loom Cut Meters are your best assurance of *uniform cut lengths of cloth.* Send for new bulletin showing how a modern mill makes Cut Meters count for greater profit.



Special care is taken to produce wheels that are accurately made, precision-ground, and properly balanced to run lightly and evenly over the cloth. That's one good reason why Veeder-Root Wheel-Driven Counters can always be counted on for years of accurate service.

Wheels may be rubber-covered, plain-surfaced, grooved or knurled . . . or the drive shaft may be fitted with a forked coupling. Counter is geared as specified to indicate in terms of yards, yards and eighths, feet, meters or other units. Get in touch with your nearest Veeder-Root office for the Wheel-Driven Counters you need for *your* equipment.

BOOTHS 264-265, American Textile Machinery Exhibition
Atlantic City, April 26-30

VEEDER-ROOT

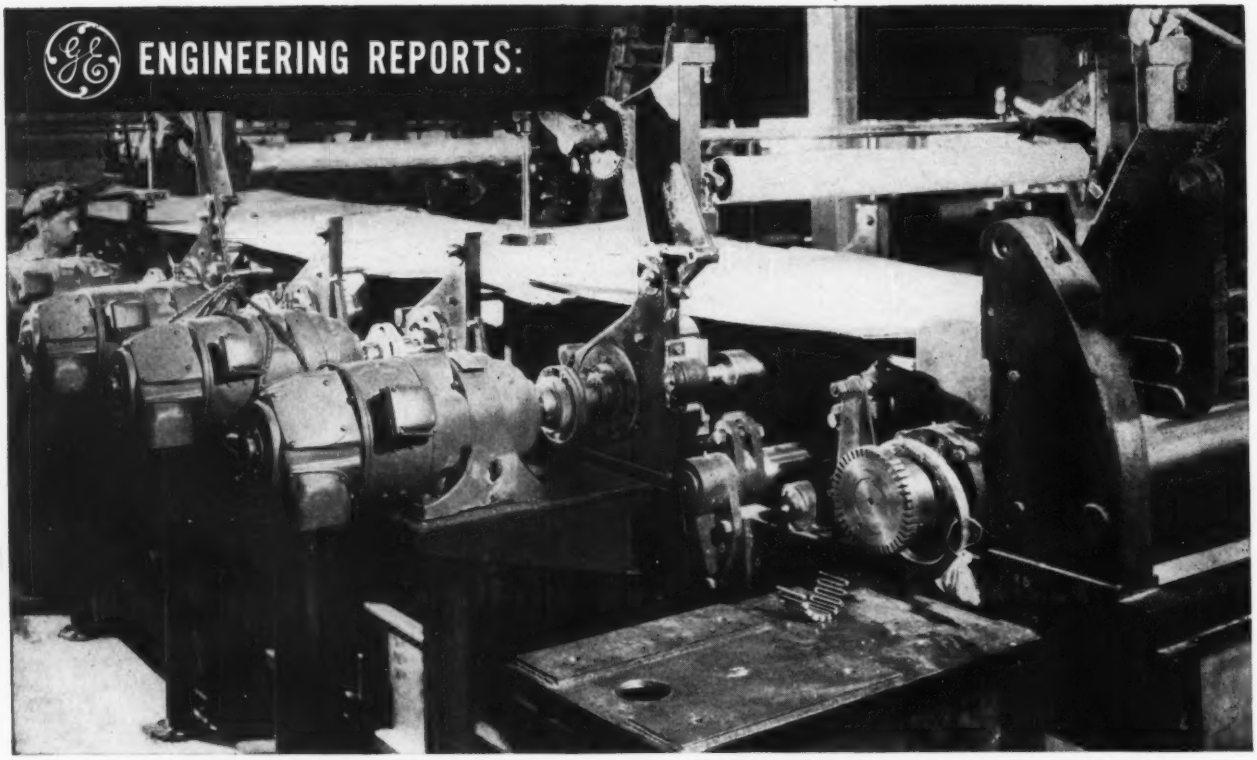
INCORPORATED

"The Name That Counts"

HARTFORD 2, CONN. • GREENVILLE, S. C.
CHICAGO 6, ILL. • NEW YORK 10, N. Y.
DUNDEE, SCOTLAND • MONTREAL 2, CANADA

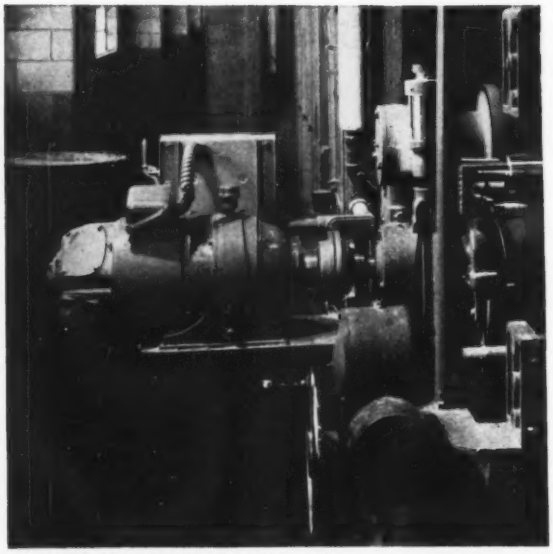
OFFICES AND AGENTS IN PRINCIPAL CITIES

ENGINEERING REPORTS:



EASY INSTALLATION, SIMPLE MAINTENANCE are features of this multiple-motor dyeing range at Grace Bleachery. This construction view shows several of the new three-piece G-E gear-motors being positioned. Although G-E drives such as this will operate for a long time with only routine maintenance, motors may be removed without disengaging the gears.

G-E Packaged Range Drive steps up



EASY-TO-MAINTAIN, G-E three-piece gear-motor runs this starching operation on a plisse range. This motor is only one of the many types that G.E. manufactures for the textile industry. Others include: totally-enclosed, ball-bearing loom motors; open, lint-proof motors; vertical motors for twisters and many others to meet your special requirements.

SPRINGMAID FABRICS

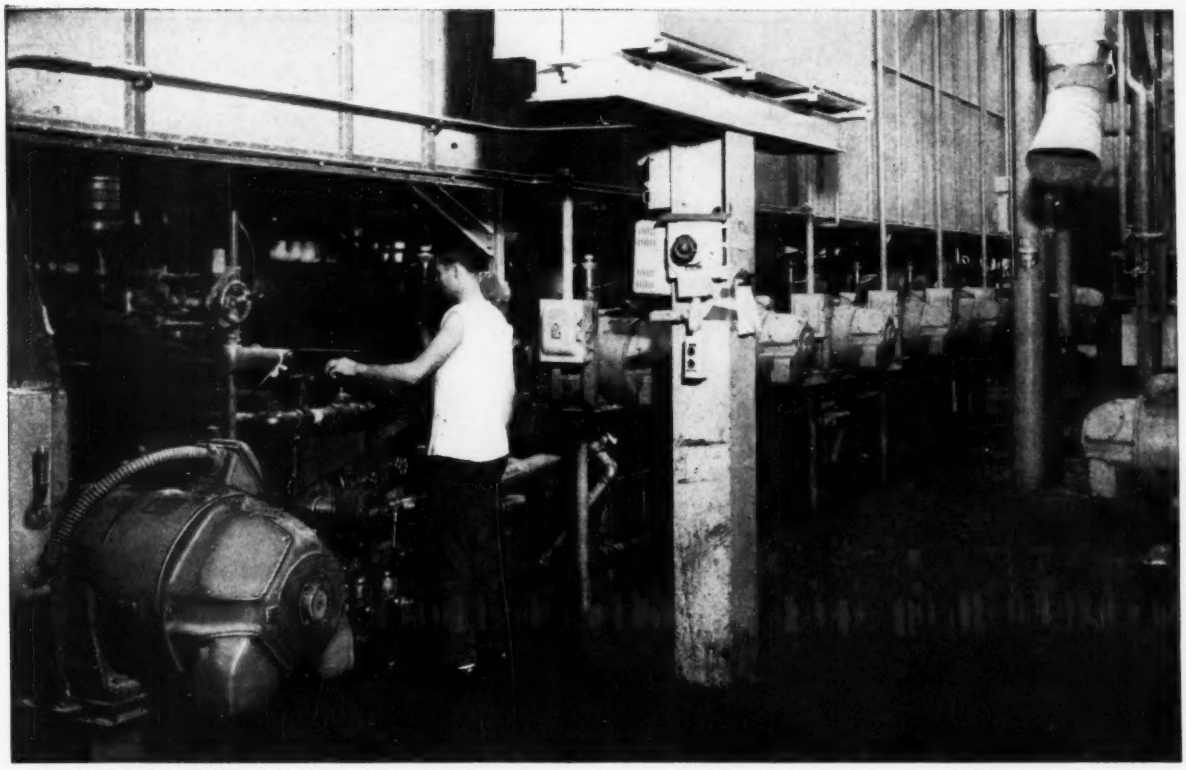
Compact drive gives Springs Cotton Mills' Grace Bleachery high speed finishing

Washing, drying, bleaching, mercerizing, dyeing—whatever your range operation may be—the General Electric packaged range drive can give you higher production per man-hour with lower maintenance costs.

Efficient co-ordination of the drive elements through centralized control is one of the factors making this increased output possible by providing accurate control of cloth tension at all operating speeds. This assures you maximum cloth uniformity with minimum supervision and thus with lower costs.

ONLY THREE STANDARD COMPONENTS make up the G-E adjustable-voltage drive system: the operator's finger-tip control station which can be installed in any convenient location; three-piece range-driving motors and their associated rheostats; and the packaged speed variator unit, containing motor-generator set and exciter, which can be located anywhere to conserve valuable range space.

YOU CAN CUT RANGE COSTS with the easy-to-maintain G-E three-piece gear-motors. They need no special mounting and may be easily removed for servicing without disconnecting the gears or removing the motor base from the foundation. Along with easy maintenance, sturdiness and smooth operation combine to assure you long life for the motor itself.



HIGH FINISHING OUTPUT of Spring Cotton Mills' Grace Bleachery is speeded by three-piece G-E gear-motors. Control system with master rheostat (on center post) provides finger-tip control of entire installation. Packaged power unit was easily located out of the range area. G.E. co-ordinated manufacture and delivery of nearly all drive equipment for this mill.

cloth-finishing output per man-hour

Check the advantages which the G-E packaged range drive can offer you:

SIMPLE TENSION CONTROL, accomplished with inexpensive compensating gates or other co-ordinating equipment

WIDE SPEED RANGES, available up to 8–1 without special equipment

CENTRALIZED CONTROL of range speed from a single location

SMOOTH, STEPLESS ACCELERATION AND DECELERATION with close speed control

EASY MAINTENANCE—motors may be removed for servicing without disengaging drive gears

DYNAMIC BRAKING for sudden stops and regenerative braking for controlled deceleration

YOU CAN PROFIT from other mills' experience. Mail coupon for additional details on G-E range drives or contact your nearest General Electric Apparatus Sales Office.

Mail this coupon for help in solving your range drive problems!

General Electric Co., Section D654-33
Schenectady 5, N. Y.

Please send me without obligation your Bulletin GEA-5010 which gives the latest developments in G-E range drives.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

Engineered Electrical Equipment for Textile Mills

GENERAL ELECTRIC

look what the GREATER EX

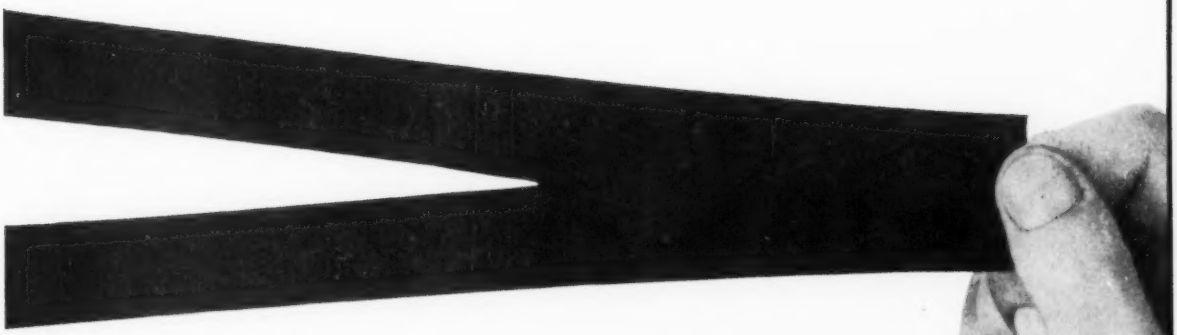
You dont have to stretch your imagination to see what Acrilan acrylic fiber can mean to you today.

For Chemstrand has given Acrilan exciting new plusses that give *you* greater advantages all along the line. Extensibility in 30/1 yarns of Acrilan now averages 20% or better; fiber extensibility averages 33% under standard conditions. These dramatic improvements mean finer yarns, richer blends, smoother processing, longer wear . . . greater useability from the time the fiber enters the mill right through its life with father (or mother or the kids).

makes higher spin limits possible. Commercial limits of 36/1 on 3.0-denier staple have been successfully demonstrated with Acrilan.

assures improved mill processing. Mills can count on cleaner, smoother processing, with reduced card loading and reduced fly throughout.

provides greater abrasion resistance . . . which means longer wear in the final fabric.



TENSIBILITY

of Acrilan can do for mills!

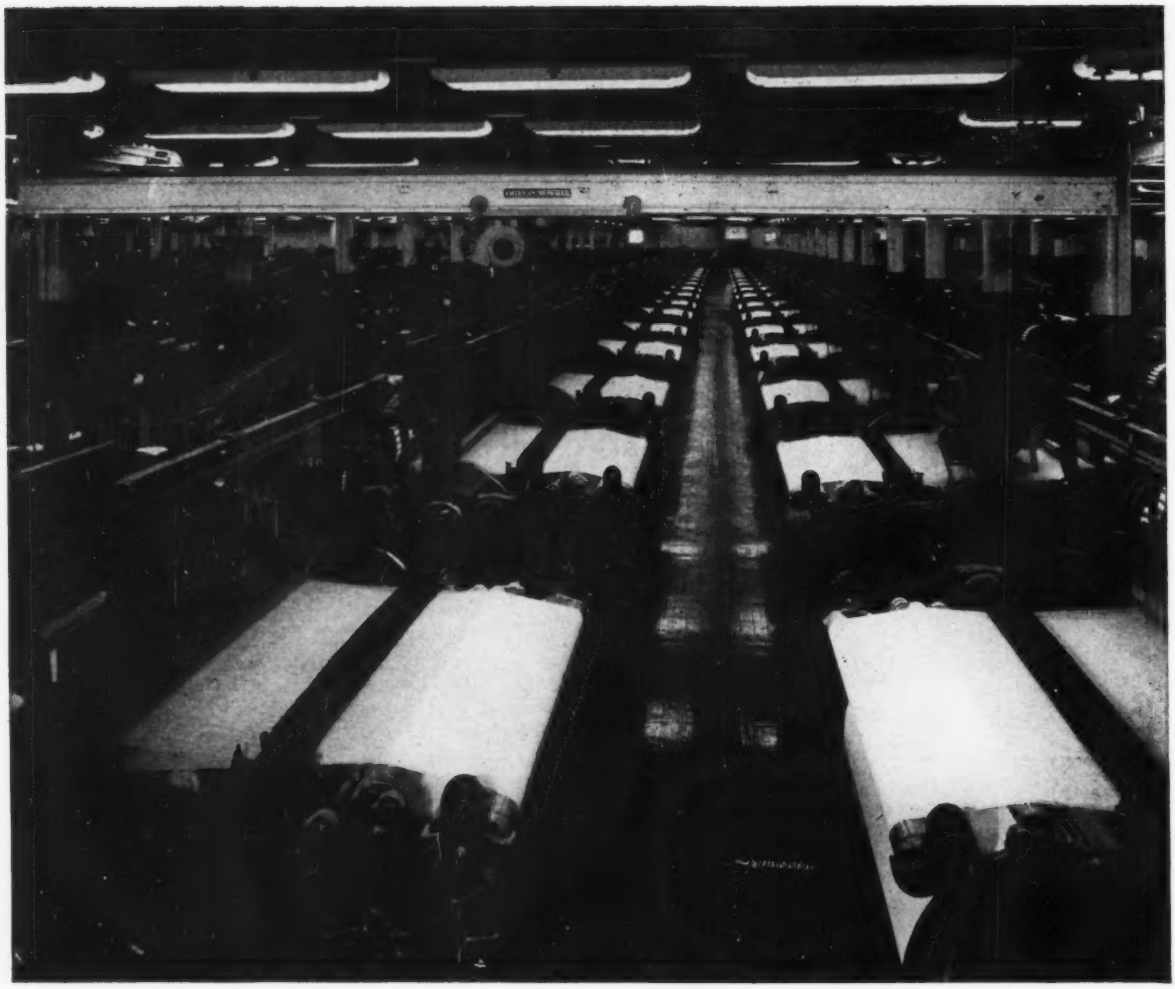
gives fabrics increased shape retention. Thanks to greater immediate elastic recovery, fabrics made with Acrilan won't droop, sag or "sit out."

But greater extensibility is only part of the new picture of Acrilan. Acrilan now gives you greater dyeability . . . and that means greater styleability as well. It can be dyed to a broad range of colors by a wide choice of dyestuffs, using standard dyeing techniques . . . *and* without the need for specialized equipment. In addition, Acrilan's reduced hairiness cuts down objectionable fuzziness on fabric surfaces, makes possible smoother-faced fabrics.

Add to its new properties all the original advantages of Acrilan . . . its rich hand, its high dimensional stability, unusual bulking properties, warmth without weight, outstanding resistance to heat, resistance to moths, mildew and chemicals, pleat- and press-retention and freedom from pilling . . . and you can see why Acrilan can offer you new volume possibilities. *Make your plans now.*

THE CHEMSTRAND CORPORATION, DECATUR, ALABAMA • NEW YORK OFFICE: EMPIRE STATE BLDG., NEW YORK 1, N. Y.

 For more information, write direct or use Reader Service post card.



Cleans Looms *AND* Handles Warps and Cloth

Here is a system that does TWO jobs equally well!

The crane-mounted blower travels above the long rows of looms preventing accumulation of lint on arches, harness, heddles and drop wires — with a high velocity fan cleaning the ceiling as well. At the end of a row, the cleaner moves over to the next row of looms while the crane reverses down the alley.

When warp beams or cloth must be moved, the cleaner crane is stopped to permit access of a hand-pushed crane along the same craneway.

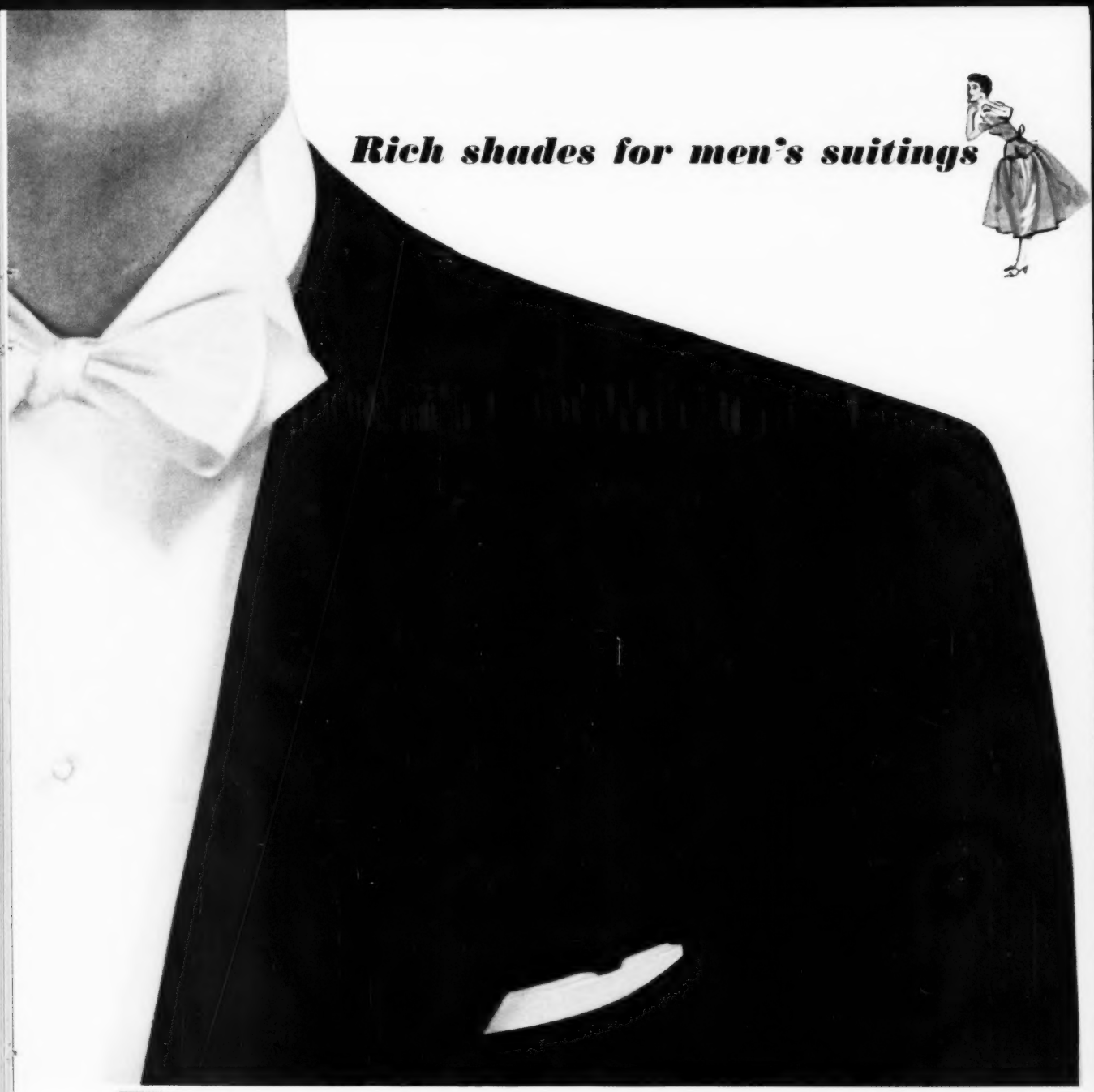
Where loom cleaning costs are high, or, for improved production of fine cloth from combed or synthetic yarns, it will pay to investigate proven returns from an American MonoRail loom cleaning system. An engineer in one of our near by Southern offices is ready to serve you.

AMERICAN OVERHEAD HANDLING EQUIPMENT

MONORAIL COMPANY

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

For more information, write direct or use Reader Service post card.



Rich shades for men's suitings

New wide range of colors for "DACRON"- wool blends*

Du Pont Dyes

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING—*THROUGH CHEMISTRY*

For coloring the "DACRON" polyester fiber component of "DACRON"-and-wool blends, Du Pont has developed a new line of dispersed dyes—the "LATYL"* colors. These dyes make possible a wide range of well-accepted colors for men's wear. Because the "LATYL" dyes have a minimum staining effect on wool, they are especially well suited for union and piece dyeing blends of "DACRON" and wool commercially. And the "LATYL" colors are compatible with all dyes for wool.

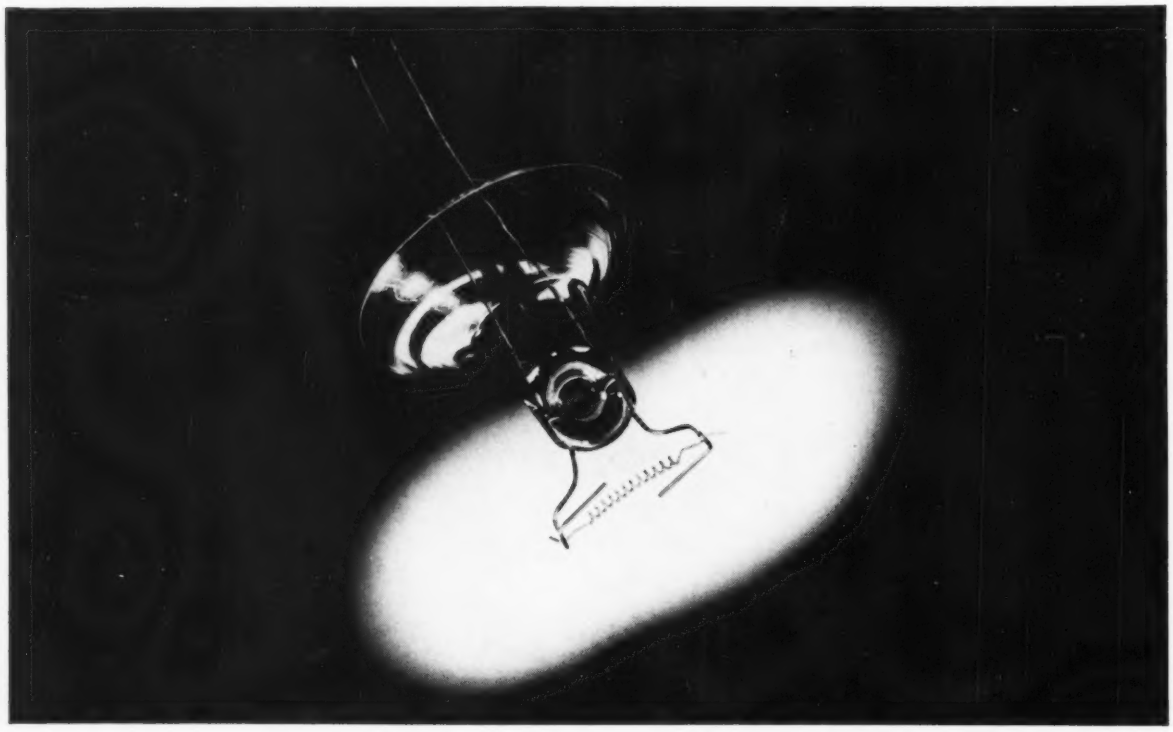
Each new blend of wool with "DACRON", "ORLON" acrylic fiber, or other synthetic fibers has posed new dyeing problems. Working with manufacturers at their mills, Du Pont's technical service experts have called upon past experience and constant research to help set up dyeing procedures and formulas for these blends.

These Du Pont technicians are ready to help you work out dyeing problems in the same effective way. For further information, or for technical-service help, write E. I. du Pont de Nemours & Co. (Inc.), Dyes & Chemicals Div., Wilmington, Del.

**Reg. U. S. Pat. Off.*

WESTINGHOUSE FLUORESCENT LAMPS

Last Over 7500 Hours..*do yours*?



Coils of tungsten wire, precision mounted like the one above, packed with an electronic mix, breathe life into your fluorescent lamps. The purer the tungsten; the fuller the packing; the longer your fluorescent lamps will last.

To assure an average life of over 7500 hours, Westinghouse processes its own tungsten and chemicals from raw ore to final electrode. You can't foretell the life of a standard fluorescent lamp by looking at it. But with a Westinghouse label, you can be sure of an average life of more than 7500 hours.

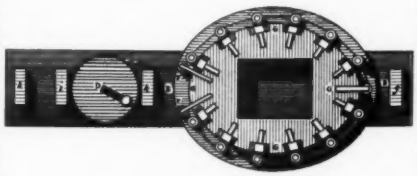
For details, contact your Westinghouse Lamp Supplier, or write to Westinghouse Lamp Division, Bloomfield, N. J.

Tune in each week on TV... Westinghouse Studio One

YOU CAN BE SURE...IF IT'S

Westinghouse

A Packaged Card Drive 9 ways better



Recognize it?

It's the top of an early spinning frame —the last word in textile equipment a couple hundred years ago. From ancestry such as this, modern textile machinery, like the American Individual Card Drive, has been developed to a point where fabrics of "hand-work" quality, produced in quantities never dreamed of, are commonplace.

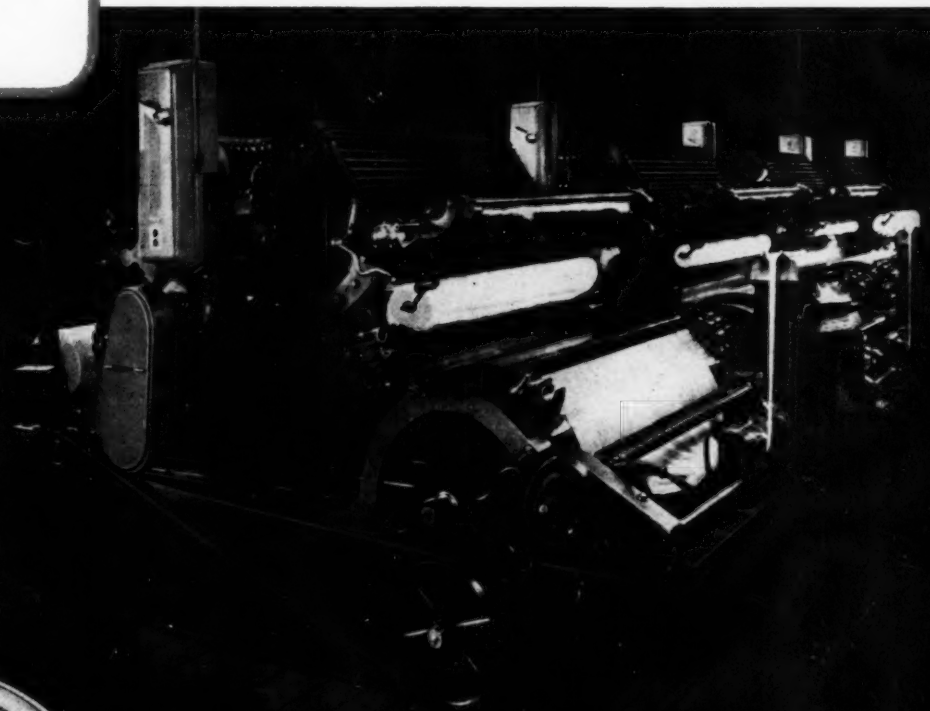
Any mill man will tell you—"get rid of line-shafting and you'll get rid of card room headaches".

The American Individual Card Drive does exactly that. An adaptation of the widely used American Shaft-Mounted Speed Reducer, the American Card Drive mounts directly on the extension of the card shaft—no possibility of card-arch deflection—eliminates the jungle of belts and overhead shafting that cuts into quality and production.

Result: no falling lint or fly, better lighting and air-conditioning possible, greater flexibility of machine speed and machine location, increased operating efficiency.

Floor space is saved, cleaning made easier. But more important, safety is yours because the belt drive is completely enclosed. No special motor or starting mechanism is required, no expensive belting needed . . . one V-belt does the work of flat-belting costing 15 times as much. And 25% card speed variation is provided with no efficiency loss.

Write today for details on American Individual Card Drives. No obligation. The American Pulley Co., 4226 Wissahickon Avenue, Philadelphia 29, Pa.



- *Increased Production*
- *Improved Product Quality*
- *Lower Maintenance*
- *More Efficient Plant Layout*
- *Working Conditions Improved*
- *Safer*
- *Greater Flexibility*
- *Reduced Belt Cost*
- *No Risk of Shut-Down From Main Drive Failure*

AMERICAN CARD DRIVE WITH BELT GUARD REMOVED

Centrifugal clutch brings card up to speed in approximately 45 seconds—permits hand stripping while card is coming up to speed —eliminates necessity of jogging. (Can be equipped for continuous stripping)

"At the profit end of the machine"

Power Transmission by

AMERICAN

PULLEY COMPANY

CUTLER-HAMMER

Fortisan*. "strengthens" the trend to light weight fabrics

Celanese*

FORTISAN*—the super-strong rayon

Fortisan, just released by the government, brings to civilian apparel and home furnishings markets the same qualities that made it so much in demand by the Armed Forces for nearly eight years. These qualities are light weight, great tensile strength and exceptional dimensional stability.

One of the first results you see on this page; a fantastically light (the fabric only weighs 3.3 oz. per sq. yard) and *comfortable* sport shirt.

Using a Fortisan warp and acetate and rayon filling, this blend is the work of Celanese Fabric Development. It shows how Fortisan brings to exceptionally light fabrics the strength, performance and tailorability of far heavier cloths. It feels cool in the hottest weather. It absorbs perspiration yet doesn't get that wilted look. It washes to perfection, and keeps its shape through washing.

Could anyone expect more of a sportshirt, regardless of price? Celanese technical representatives will be glad to work with you in developing fabrics using the superb qualities of Fortisan to the greatest advantage.

Celanese Corporation of America, 180 Madison Avenue, New York 16. Boston, Mass. Camden, N. J. Celanese Drive, Charlotte, N. C. *Reg. U. S. Pat. Off.

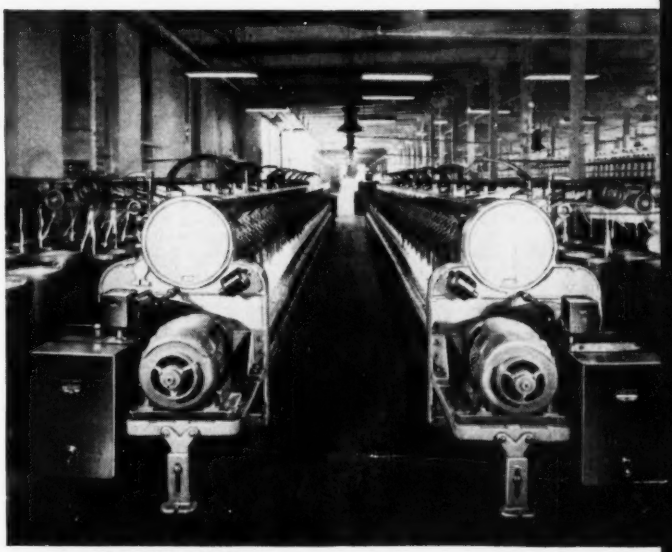
CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

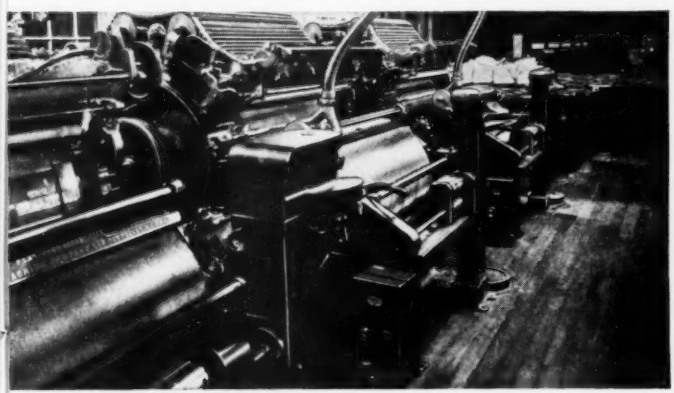
You can judge it by the men who specify it

Cutler-Hammer Motor Control is so frequently the specified choice of mills staffed with able technical men that the record is most convincing. These men know that Cutler-Hammer dependability is no mere competitive claim. They know it is the earned advantage of the longest and most intensive specialization in motor control engineering. They have seen its proof stand out clearly in Cutler-Hammer Motor Control performance... over the entire range of textile control requirements from the simplest starters to the most complex electronic equipment. These men know *both* motor control and textile production needs. Their continued preference for Cutler-Hammer can mean nothing less than continued satisfaction. Judge Cutler-Hammer Motor Control by the men who specify it!

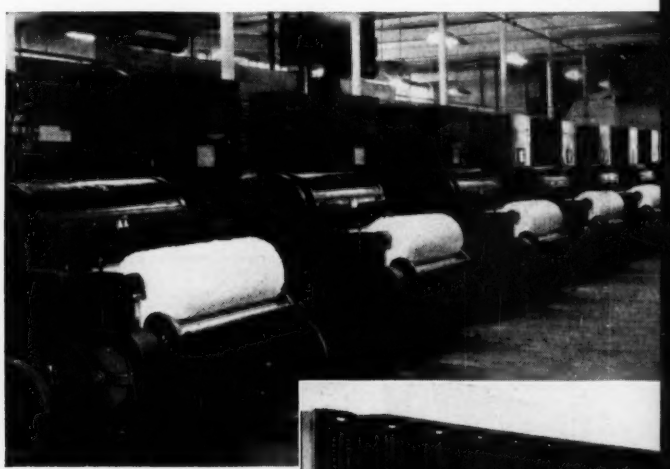
You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.



for **STATESVILLE** Cutler-Hammer Smooth Starters and Shipper Rod Switches mounted on roving frames, STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

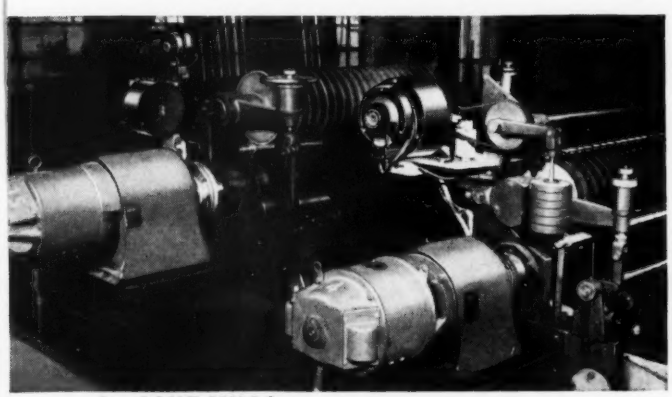


for **ANCHOR ROME.** Cutler-Hammer Card Controllers in the Anchor Rome Mills, Inc., Rome, Ga.



for **EXPOSITION**

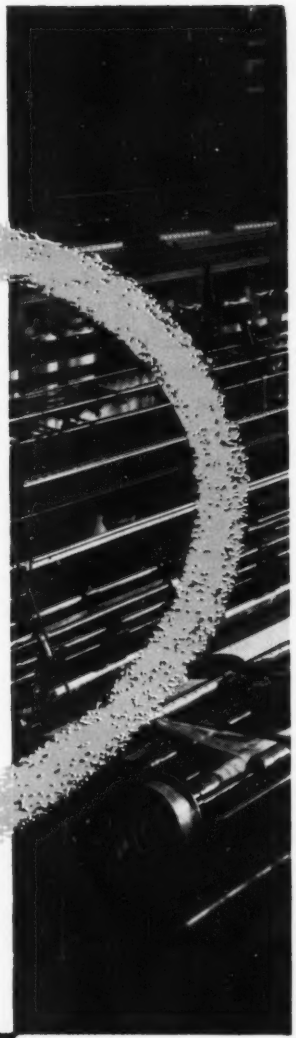
at Atlanta. Cutler-Hammer Safety Switches and Automatic Starters shown at the right serve the pickers shown above. Cutler-Hammer Control is also used in opening, cleaning, on drawing frames, roving frames . . . on through to the looms in this great mill.



for **CONE MILLS.** Cutler-Hammer Dancer Roll Rheostats and Vernier Rheostats on twenty motor indigo dye range in Cone Mills, Greensboro, N. C.

VISIT OUR BOOTHS 427-428 AT ATLANTIC CITY EXHIBITION

CUTLER-HAMMER
MOTOR CONTROL
C-H



announcing GULFTEX OIL A -the ideal needle oil

- resists gumming
- helps keep needles clean and smooth
- easily washes out of fabrics
- helps prevent buildup of size

For more information, write direct or use Reader Service post card.

for CONE MILLS. Cutler-Hammer Dancer Roll Rheostats and Vernier Rheostats on twenty motor indigo dye range in Cone Mills, Greensboro, N. C.

Out of Gulf Research Laboratories has come another outstanding textile lubricant —Gulftex Oil A, the ideal needle oil.

In tests conducted at several leading full-fashioned hosiery mills, Gulftex has proved that it will aid effectively in keeping needles clean and smooth, thus contributing to smoother knitting and fewer seconds.

Gulftex also has outstanding nonstaining characteristics as proven in scores of fade-o-meter tests, and easily washes out of fabrics.

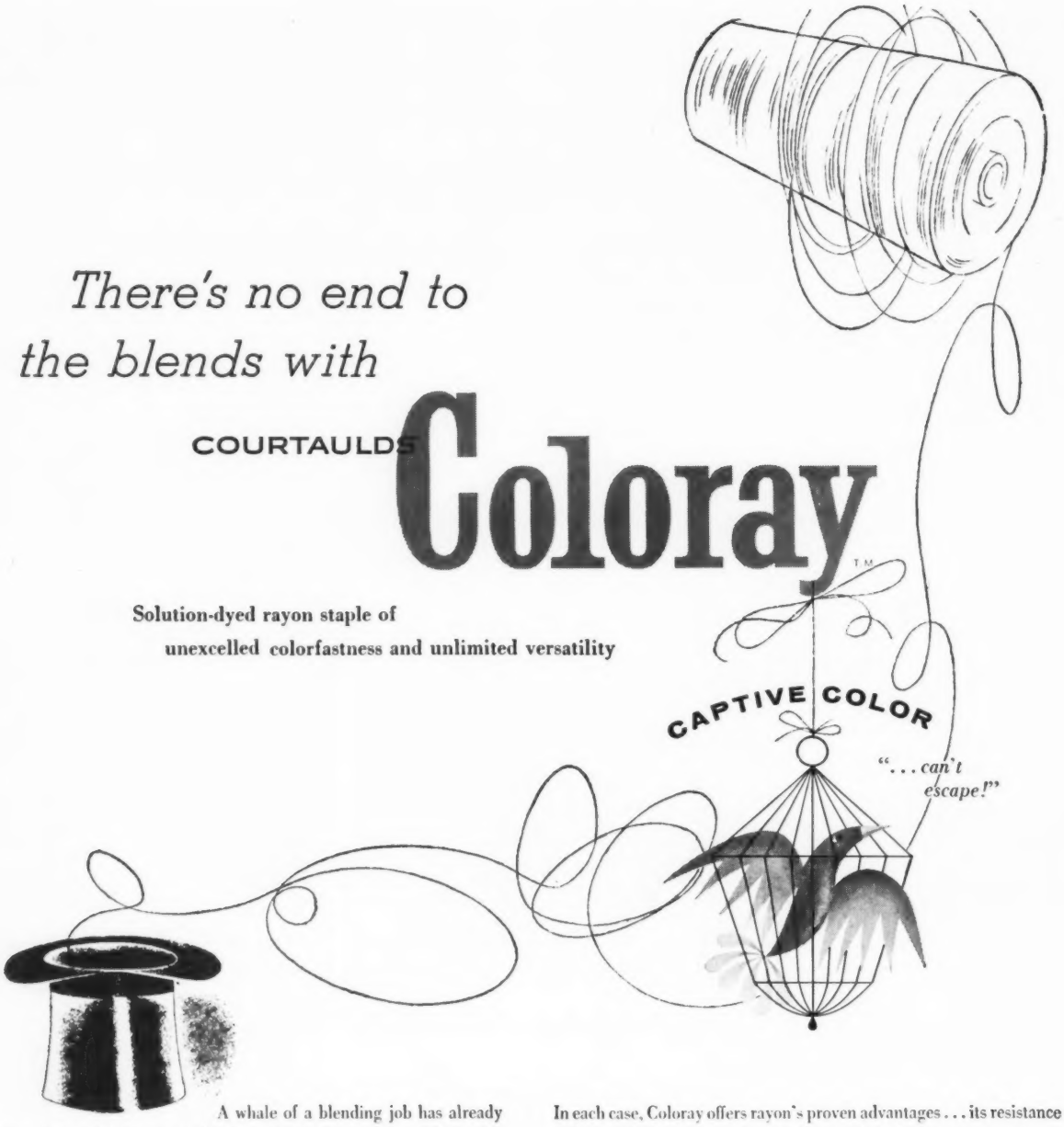
It may be sprayed on the needles or applied with a brush.

Developed primarily as a needle oil, Gulftex may also be used as a sewing machine lubricant, especially where the staining of fabrics is a problem.

Why not have a Gulf Sales Engineer demonstrate the advantages of Gulftex Oil A in your mill now? You can reach him simply by contacting your nearest Gulf office.

GULF OIL CORPORATION
GULF REFINING COMPANY
1822 GULF BUILDING
PITTSBURGH 30, PENNSYLVANIA

GULF SERVES INDUSTRY



There's no end to the blends with

COURTAULDS **Coloray**™

Solution-dyed rayon staple of unexcelled colorfastness and unlimited versatility

A whale of a blending job has already been done with this wonderful fiber. In England—since '38. In this country—since '46. Over 2,000 colorfast colors already blended. And that's only the beginning.

You can do almost anything in color—starting with the basic range in Coloray. You can get more and more solid colors—delicate, dynamic or deep. You can get subtle near-solids and rich heather mixtures. Colored nubs. Irregular slub yarns—in multicolor! Not only color variety, but texture variety.

And still that's only the beginning! You can get marvelous new hybrids by blending Coloray with other fibers... cotton, wool, silk, acetate, nylon, the new synthetics like the polyesters and the acrylics.

In each case, Coloray offers rayon's proven advantages... its resistance to heat and abrasion... its tensile strength and absorptive power.

And Coloray offers a *low-cost* solution to tough dyeing problems. Dollar for dollar, it's less expensive than stock, yarn or piece dyeing. All in addition to Coloray's vital color advantages—amazing fastness, richness, uniformity; color remarkably unaffected by standard finishes; color that protects yarn quality.

How can you use Coloray to your benefit? Ask Courtaulds, the company that developed the viscose process and originated solution-dyeing.

Coloray and white rayon staple are produced in Courtaulds' new plant at LeMoyne, Alabama. 13 basic colors are available in these deniers and staple lengths: 1½ denier-1 9/16" staple, 3 denier-2" staple.

For further information, write Fabric Development Dept.

COURTAULDS, INC., *first name in man-made fibers, first name in solution-dyeing*

600 FIFTH AVENUE. NEW YORK 20, N. Y. • GREENSBORO, N. C. • LE MOYNE, ALA.

RHONITE R-1

FOR CRUSH-RESISTANT COTTONS

For cotton dress goods that are permanently crush-resistant, you can depend on RHONITE R-1. This washfast resin imparts to cottons, rayons and blended fabrics a crush-resistance and stability so durable that repeated washings can't dull their crisp good looks.

In plain, calendered or embossed finishes, RHONITE R-1 produces this same resistance to crushing and wrinkling, makes fabrics withstand many launderings and still retain a lasting beauty.

For unusual crush-resistance, it pays to use RHONITE R-1.

Write or call for complete information about RHONITE R-1—one of the quality chemicals for textile finishing made by Rohm & Haas Company.

TEXTILE CHEMICALS

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

CORN PRODUCTS REFINING COMPANY

Presents

A COMPLETE LINE OF STARCHES, GUMS & DEXTRINES

Highly recommended for their greater cleanliness, superior uniformity, stability of viscosity, and constant availability

GLOBE BRAND CORN STARCH

This starch is ideal for warp sizing carded or combed yarns where a thick boiling starch is advantageous or for use in homogenizers. Globe Pearl Corn Starch produces strong films, reducing breaks on the slasher and loom.

EAGLE BRAND CORN STARCH

This thin boiling starch is popular for warp sizing carded and combed yarns. Available in all fluidities, permitting viscosities required to maintain correct size concentrations for best weaving.

HERCULES BRAND CORN STARCHES

Oxidized starches are used in a wide variety of sizing applications. They produce a smooth but tough film.

WARP SIZING FOR SPUN RAYON BLENDS OR SYNTHETIC FIBER SPUN YARNS

Globe Gum and Dextrines have been popular for many years for warp sizing spun rayon. They have the superior qualities recommended for easy de-sizing.

FINISHING SIZES

Globe Brand extra thick starches have less setback and make a smooth paste with reduced congealing on cooling, producing superior pastes for backfilling and printing.

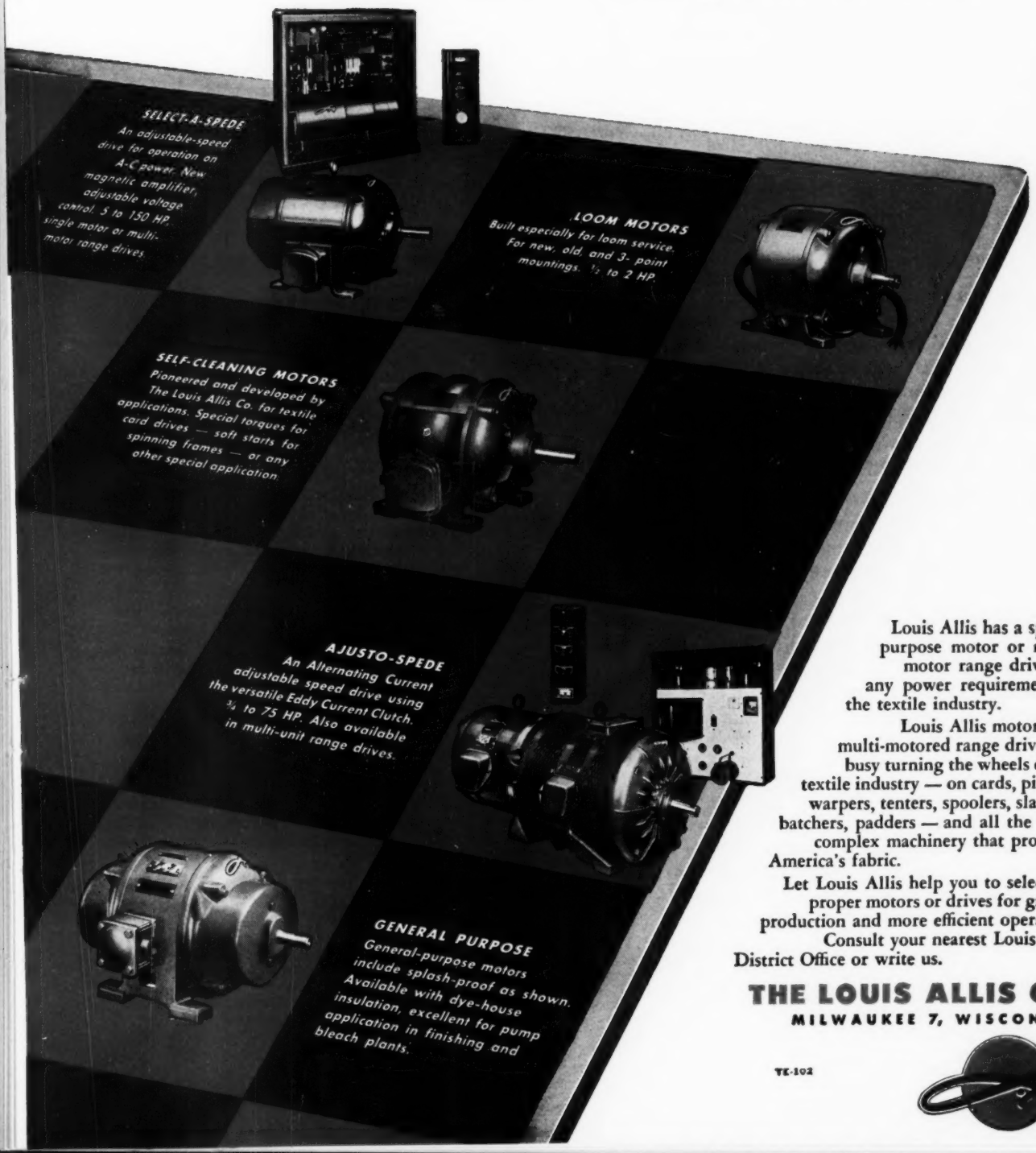
Globe Gum and Dextrines fill many finishing requirements. They are versatile and are in increased demand because of their application ease, full compatibility and fabric versatility.

**Take advantage* of our free technical service. Our lab and field experts will welcome the opportunity to help you with actual production problems. Write us today.

CORN PRODUCTS REFINING COMPANY • 17 Battery Place, New York 4, N. Y.

Make the right move!

Use Louis Allis Textile Motors and Adjustable Speed Drives


SELECT-A-SPEDE
An adjustable-speed drive for operation on A-C power. New magnetic amplifier, adjustable voltage control. 5 to 150 HP. single motor or multi-motor range drives.
LOOM MOTORS
Built especially for loom service. For new, old, and 3- point mountings. ½ to 2 HP.
SELF-CLEANING MOTORS
Pioneered and developed by The Louis Allis Co. for textile applications. Special torques for card drives — soft starts for spinning frames — or any other special application.
AJUSTO-SPEDE
An Alternating Current adjustable speed drive using the versatile Eddy Current Clutch. ¾ to 75 HP. Also available in multi-unit range drives.
GENERAL PURPOSE
General-purpose motors include splash-proof as shown. Available with dye-house insulation, excellent for pump application in finishing and bleach plants.

Louis Allis has a special purpose motor or multi-motor range drive for any power requirement in the textile industry.

Louis Allis motors and multi-motored range drives are busy turning the wheels of the textile industry — on cards, pickers, warpers, tenters, spoolers, slashers, batchers, padders — and all the other complex machinery that produces America's fabric.

Let Louis Allis help you to select the proper motors or drives for greater production and more efficient operation. Consult your nearest Louis Allis District Office or write us.

THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN

TE-102

When you need instrument service . . .

Ever have a tire blow out while you're traveling late at night? If it happens near a service station, you're lucky. But if it's on a lonely road far from town, you've got trouble.

When it comes to service on instruments, you don't need to take chances on being lucky. Because when you have Honeywell instruments, you've always got the comfortable feeling that service is close at hand . . . whenever and wherever you want it . . . from the world's biggest instrument service organization.

Over 110 Service Centers

No matter where you may be, there's a Honeywell service man near you. Offices are located in more than 110 cities of the United States and Canada, near every large production center.

When you run into trouble, just telephone or wire the nearest of these offices. You'll get a service specialist promptly . . . often within a few hours. This quick attention to your needs protects your production schedules, and prevents delays that can cause costly stoppages.

Trained Personnel

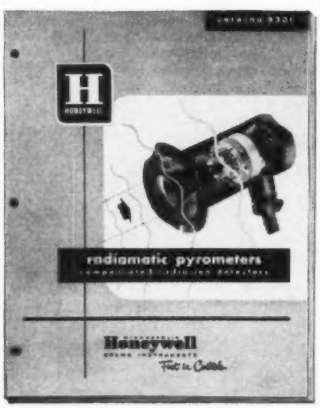
Honeywell service men are thoroughly trained for their important responsibilities. In the Honeywell factories, hand-picked men learn both the theory and practice of instrument maintenance. Then they serve an apprenticeship in the field offices, to gain further first-hand experience. You can be sure that the Honeywell man who calls at your plant is a qualified specialist, well versed in the practical art of keeping good instruments in the best condition.

Periodic Service

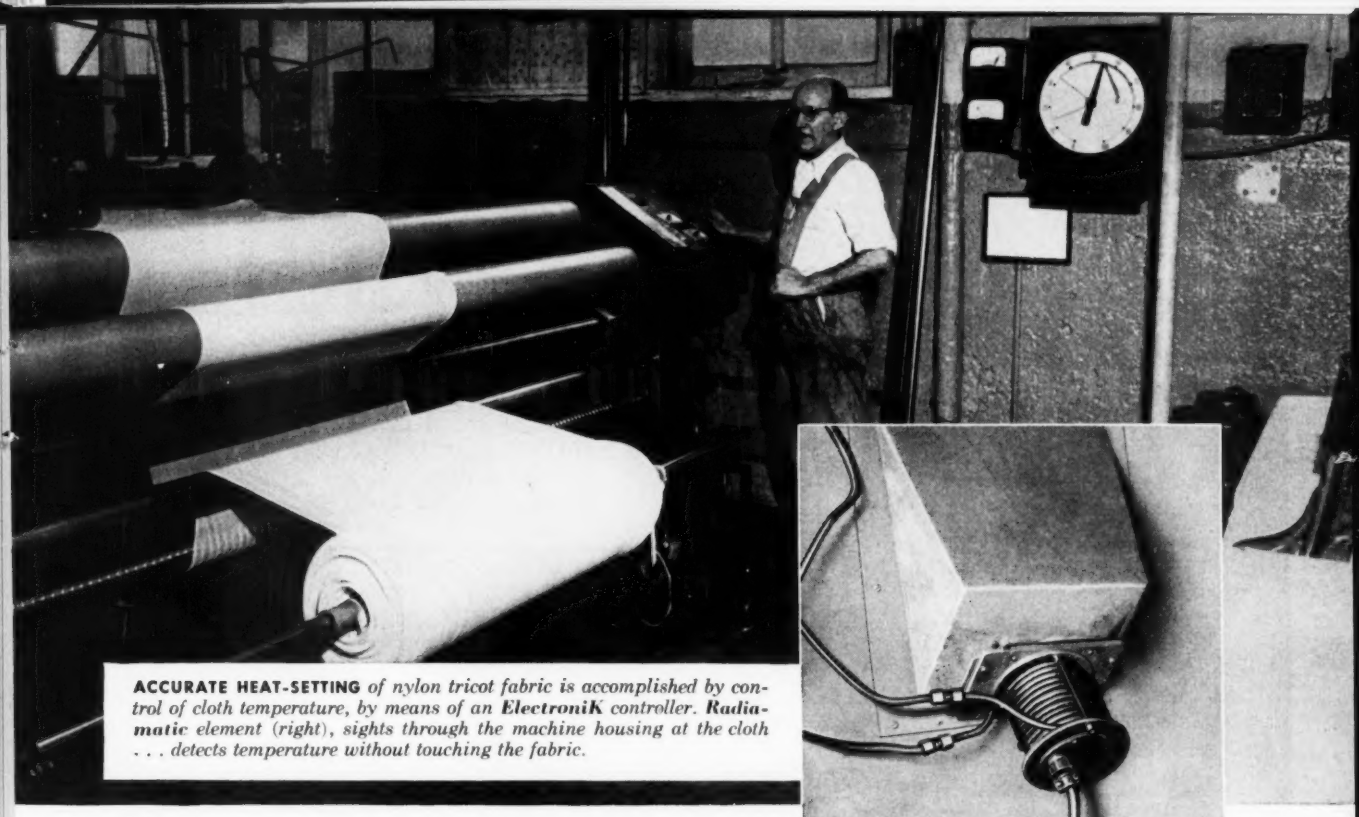
But why wait for emergencies—when you can prevent them with periodic service. Under a simple contract, a Honeywell man will visit your plant at regular intervals to inspect, clean and adjust your instruments and controls. The plan is economical, and can save you hours of production time. Our nearby branch office will be glad to give full details on Honeywell Periodic Service.

Nylon mill doubles output...

Radiamatic Unit



Catalog 9301 lists various types of ***Radiamatic*** *Pyrometers,* ***ElectroniK*** *instruments and accessories for industrial temperature measurement and control.*



ACCURATE HEAT-SETTING *of nylon tricot fabric is accomplished by control of cloth temperature, by means of an* ***ElectroniK*** *controller.* ***Radiamatic*** *element (right), sights through the machine housing at the cloth . . . detects temperature without touching the fabric.*

aids new heat-setting technique

AN ingenious method for combining nylon heat-setting and tentering into a single operation . . . under accurate control by a *Radiamatic* pyrometer . . . has more than doubled production and greatly improved fabric quality, at Julius Kayser & Co., Ltd., Sherbrooke, Quebec.

Both of these important operations are performed on a tenter frame, to which has been added a radiation-heated box that serves as the heat-setting unit. Needless to say, accurate automatic control is essential to the functioning of this system . . . especially to the heat-setting stage. If temperatures are too low, quality will suffer; if too high, fabric will be damaged.

To get the required precision of temperature, Kayser uses a *Radiamatic* element with an *ElectroniK* control system. The *Radiamatic*, a Low Range Unit, sights at the fabric as it leaves the heat-setting unit. It measures *actual* temperature of the cloth . . . instantly detects the slightest change. The *ElectroniK* instrument, with its *Electr-O-Pulse* control relay, records the fabric temperature and regulates heat input to the radiation heaters to maintain constant temperature of the fabric. The control system proportions heat with exceptional sensitivity, by switching power on and off in pulses of controlled length.

Under control of this accurate, sensitive system, temperature stays exactly at specified heat-setting value; and fabric receives a uniformity of treatment never before possible.

Ask your nearby Honeywell sales engineer to discuss how this control can work for you. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

● **REFERENCE DATA:** Write for Catalog 9301, "*Radiamatic* Pyrometers."

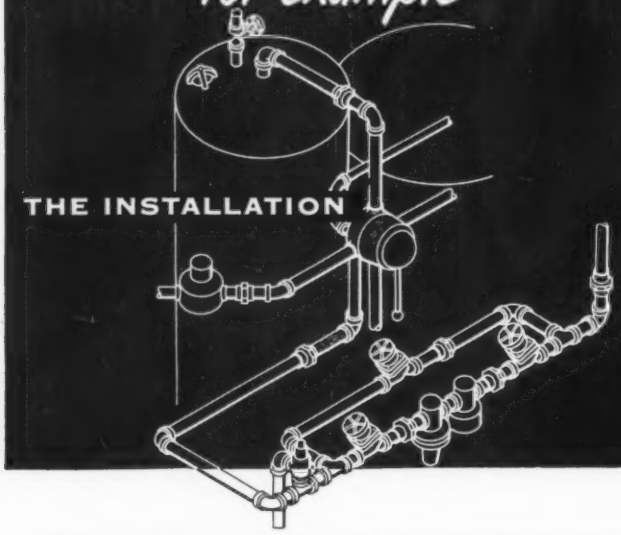
MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls

This Valve Stops the "Up" in Upkeep ...on Water Service Piping,

for example



At the Excello Paper Products Co., Inc., Cincinnati, using Crane Diaphragm valves on city water supply lines; also on plant service water piping, hot and cold.

VALVE SERVICE RATINGS

SUITABILITY: Doing what other valves couldn't

FEATURES: Packless - Long Life Diaphragm

MAINTENANCE COST: No regular maintenance needed

SERVICE LIFE: Outlasting other valves many times

OPERATING RESULTS: Safety hazard to personnel stopped

AVAILABILITY: Crane catalog item - No. 1610

THE CASE HISTORY

Typical of many processes using a lot of water, this plant has numerous open end lines and hose connections. And because of very frequent operation, the valves formerly used in these lines required more than usual servicing to keep up with leakage, dripping hose lines, and hazardous, messy floors.

Crane No. 1610 Diaphragm valves were selected to replace the troublesome conventional valves. Immediately these packless valves stopped the annoyance and expense of stuffing box and seat leakage. Their pliable disc insert ring made a tight seat on open end lines with minimum effort on handwheels.

The replacements were started about 2 years ago. With no attention whatsoever, all Crane Diaphragm valves remain tight, and the plant's water leakage problem remains solved.

THE VALVE

Water is but one of hundreds of fluids Crane Packless Diaphragm valves handle efficiently. Their sealed-to-fluid bonnet and "soft-seating" disc are ideal for all sorts of hard-to-hold liquids and gases; also for sludges, slurries, etc. Separate disc and diaphragm design saves diaphragm wear; permits tight seating even should diaphragm fail. Choose these valves from a wide range of materials, lined or unlined body, for corrosive or ordinary applications. See your Crane Catalog, or your Crane Representative.

THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

The answer to most of your questions about stainless steels are right at your finger tips, when you use Crucible's unique new Stainless Steel Selector.

Want to know the machinability characteristics of a stainless grade? Resistance to corrosion or scaling? Physical or mechanical properties? You can get the answers to these and other questions simply by setting the arrow on the Selector slide at the proper window. It's just as quick and easy as that.

And almost as fast as you get the answer, you can get the steel you need. For many of the REZISTAL stainless steels shown on the Selector are carried in stock in Crucible warehouses conveniently located throughout the country.

To get your free copy just fill in and mail the coupon. Better do it now.

HOW THE SELECTOR WORKS:

Start with the problem. For example, resistance to corrosion in contact with copper sulfate. Just set the slide at the proper index number shown on the Selector (in this case on the back), and you have the answer in a second – grades 302 and 316 are fully resistant to this form of attack.

Crucible Steel Company of America
Dept. TW, Henry W. Oliver Building
Pittsburgh, Pa.

Name_____

Company_____ Title_____

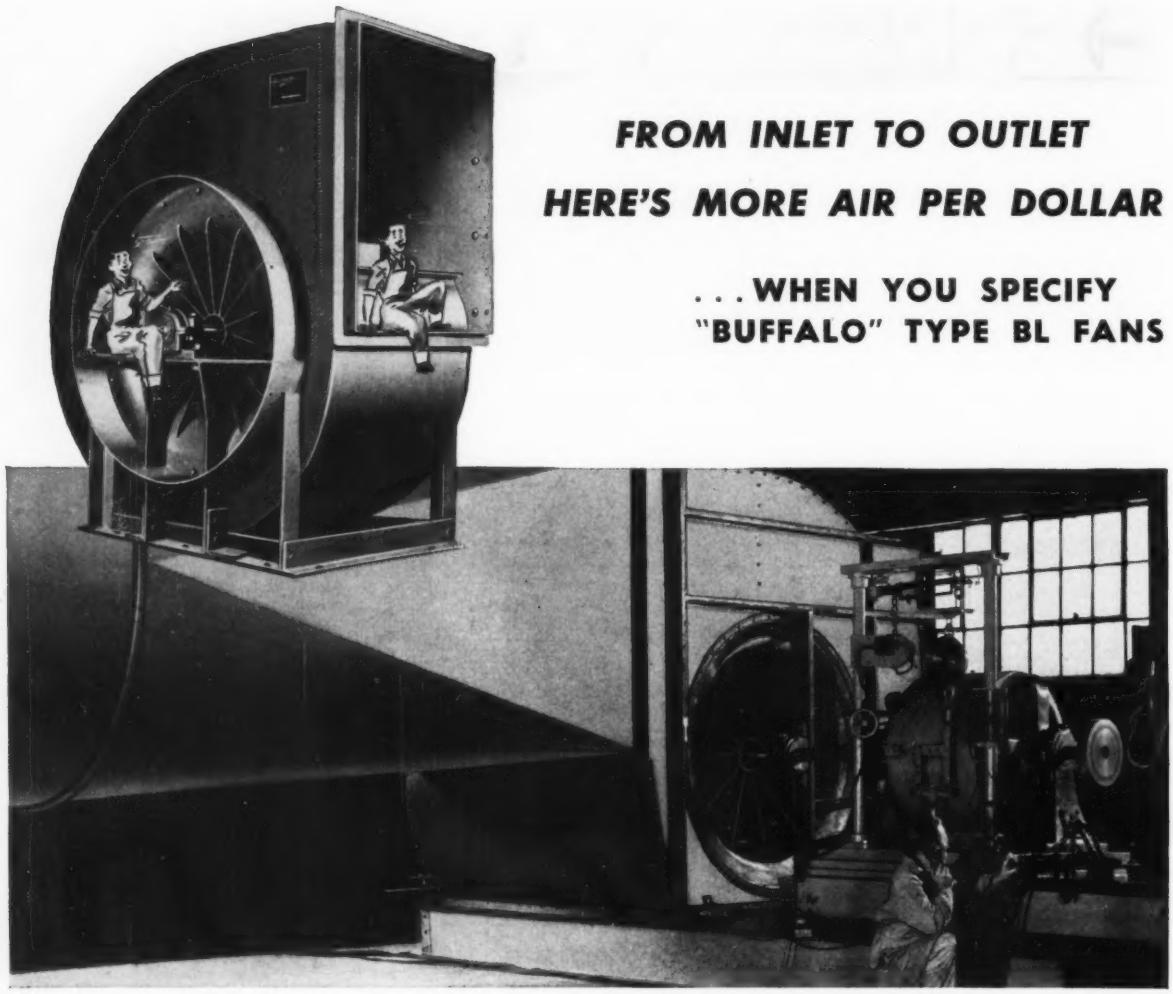
Address_____ City_____ State_____

CRUCIBLE first name in special purpose steels

54 years of Fine steelmaking **STAINLESS STEELS**

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • MAX-EL • ALLOY • SPECIAL PURPOSE STEELS



FROM INLET TO OUTLET
HERE'S MORE AIR PER DOLLAR

. . . WHEN YOU SPECIFY "BUFFALO" TYPE BL FANS

Even before incoming air reaches the wheel of the "Buffalo" BL Fan, it is guided in the most efficient path. The inlet bell is smoothly curved for absolute minimum friction; while the welded-on stationary inlet vanes reduce turbulance and assure rated air delivery even if inlet conditions are unfavorable. The "Buffalo" inlet is one reason why "Buffalo" air-moving costs are low.

The new improved "Buffalo" rotor, too, vitally affects performance. Here the full-curvature die-formed shroud and the backward curved blades move the air through the specially shaped housing and outlet with smoothness, quietness and efficiency. In addition, the fan's performance is stable from shut-off to free air delivery.

Besides these and other features, there is an intangible in all "Buffalo" fans that has always made for high satisfaction. We call it the "Q" factor, or built-in quality which provides long life and freedom from trouble. This is the sum total of the 77 years of "Buffalo" experience and know-how that goes into every fan to leave our plant.

For further details on "Buffalo" Type BL Fans, write for new Engineering Bulletin F-100

"Buffalo"

BUFFALO FORGE COMPANY

184 Mortimer Street Buffalo, N. Y.

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

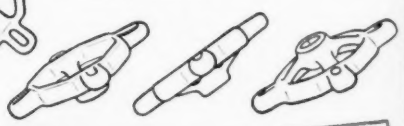
VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

WHAT TO LOOK FOR

when you buy a Bronze Valve

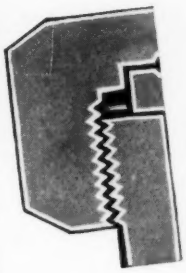
1 LOOK FOR DESIGN. Use the right valve for the right type of service at the right pressure. There is no such thing as an "all-purpose valve" . . . so don't try to make *one* valve do. *In the complete Lunkenheimer line, there are 125 basic bronze valves — each ideal for a certain type of service. Get your Lunkenheimer Distributor's recommendations.*

2 LOOK FOR OPERATING FEATURES, particularly those that make the valve longer-lasting and easier to use, such as the handwheel. *Lunkenheimer patented Non-Slip® Handwheel assures a firm, cool grip—makes it easy to close the valve tight, reducing wear and eliminating leakage. All Lunkenheimer Bronze Valves have the new Non-Slip Handwheel, along with many other exclusive operating features.*



3 LOOK FOR A LONG-WEARING STEM, since stem-thread wear is one of the most common causes of valve failure. *Lunkenheimer Bronze Valves have Stemalloy® Stems — an exclusive silicon-bronze alloy which completely eliminates stem-thread failure. Not one of the millions of Stemalloy Stems now in service has ever been returned because of thread wear.*

4 LOOK FOR CLOSE-GRAINED BRONZE, the mark of valve quality. Dense bronze not only increases the valve's strength, but makes it much more resistant to corrosion. *Lunkenheimer Bronze Valves are made of original Lunkenheimer alloys recognized by metallurgists as the highest-grade valve bronzes ever developed.*



Remember—The Price Of A Lunkenheimer Valve Gets Smaller And Smaller And Smaller With Each Passing Year Of Dependable Service

ALL POPULAR SIZES of Lunkenheimer Bronze Valves are maintained in stock for prompt delivery. Write for new Circulars 534, 582, and 574 describing typical designs. The Lunkenheimer Co., Box 360R, Cincinnati 14, Ohio.

LUNKENHEIMER L QUALITY

BRONZE • IRON • STEEL

LUNKENHEIMER®

THE ONE *Great* NAME IN VALVES

L-154-15

RESILIENCY . . . is an important part of a needle's ability to withstand long service and knit consistently fine fabrics. The degree of resiliency found in Textile Needles is not too much, not too little; it is the product of a special steel formula and a special tempering process.

And to insure uniformity, all manufacturing steps are automatically and electronically controlled. In spring-beard or latch needles, Textile's care and control in manufacture make possible the uniform resiliency and the perfect combination of many qualities required by needles to knit finer fabrics at lower unit cost.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

Arrow LATCH NEEDLES

A MESSAGE TO AMERICAN INDUSTRY • ONE OF A SERIES

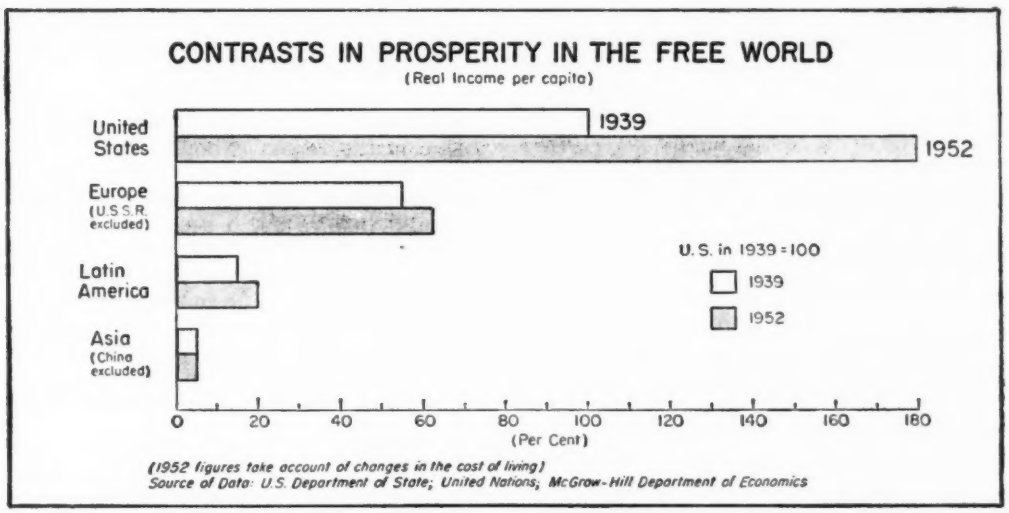
Contrasts in Prosperity Endanger the Free World

The chart in the middle of this page summarizes a situation of profound importance to every American. It shows that:

1. On the average, Americans are vastly better off economically than most other people in the free world, and
2. In recent years the gap in income between the average American and the average European, Latin American or Asian has greatly widened.

A Mounting Contrast

Even greater is the contrast between the real incomes of Asians and Americans. Today most Asians are no better off economically than they were back in 1939. On the other hand, the real income of the average American has almost doubled. As a result, the real income of the average Asian—always small by our standards—is now only a tiny fraction of that of Americans.



The chart shows that, at the outbreak of World War II, the real income (that is, actual purchasing power of income) of the average American was substantially higher than the average European's and much higher than the average Latin American's or Asian's. Since then, the European and Latin American have become better off. But the improvement in the economic lot of the average American has been so great that the others have been left far, far behind.

It must be remembered that the figures used to construct the chart are of varying quality. The fact is that few of the poorer countries have reliable statistics. However, it is generally agreed among competent observers, that the figures here presented offer a correct impression of the wide disparity in the average of real incomes between various parts of the free world. The figures, of course, have nothing decisive to say about spiritual and cultural values. In these, coun-

tries with relatively little material prosperity may be rich.

It is possible to draw a variety of morals from the story of lagging growth of income in other parts of the world. For one thing, it reflects the dynamic force of private enterprise. Private enterprise is characteristic of our economy far more than it is of most of the other free economies. The chart also reflects the fact that we are bountifully blessed with the natural resources essential to a high level of real income. Moreover, we did not suffer from the devastation and waste of two world wars as did many of the other free nations.

Narrowing the Gap

But perhaps the most important message which the chart conveys is one of warning. It warns that something must be done to narrow the gap in prosperity between America and other parts of the free world, if that world is to be united successfully in the struggle against totalitarian Communism. Writing in the HARVARD BUSINESS REVIEW, Kenneth E. Boulding recently put it this way:

> *"The crux of the problem is how to raise the three-quarters of the world that live on a low level to the high level of the other quarter, for it is precisely this wide disparity that makes our world so unstable. American-Russian relations, for instance [are] . . . complicated almost unbearably by the fact that each power is competing for the support of the vast fringe of underdeveloped countries . . . These countries are dissatisfied with their present state and are hovering between the two cultures, wondering which offers them the best chance of shifting from their present low-level to a high-level economy."*

Very real danger threatens from any feeling which may develop in the less fortunate free nations that our enviable economic progress has been made at their expense. Instead of viewing the American economic system as a model that might be followed by their own countries, they may be led to see in it a menace to their well-being. If Communist propaganda can persuade these people that their alliance with the free world will only result in their dropping farther and farther behind an increasingly prosperous United States, they will be driven to the side of totalitarianism.

Test of Effective Leadership

How can these free nations on the lower half of the income ladder be helped to alleviate the conditions that keep them there? Surely this question poses a whole series of complicated problems. Yet, if we do not exercise some effective leadership toward their solution, we can be sure that Russia will take advantage of the situation. In these circumstances, it is essential to both the stability and security of the free world that we help our less prosperous neighbors make satisfactory headway.

This does *not* mean that the United States should sacrifice its own economic progress in favor of some sort of global leveling scheme. On the contrary, a continually expanding and stronger economy is essential if we are to provide any real aid to our friends. Also, it goes without saying that our friends must be disposed to do all they can to improve their own economic position, if our cooperation to that end is to be effective.

Great Skill Required

Our part in a program to achieve this goal calls for a high degree of skill and statecraft. It involves international trade policy, which, in itself, presents a perplexing range of problems. It involves also programs of foreign technical and economic assistance. And expanded foreign investment must play a key role in a balanced program to strengthen the economies of the free world for our common good.

The Commission on Foreign Economic Policy, headed by Clarence Randall, has recently submitted a report, embodying the results of a monumental inquiry into our foreign economic relations and measures to improve them. From the very nature of the subject, discussion of the report is bound to be attended by much controversy and conflict. However, an awareness of the facts presented by this chart should inspire us to accord to the problems posed by the Randall Commission the careful and sober consideration they must have if any real progress is to be made in raising the general standards of human well-being throughout the free world. Our willingness and ability to do this have now become the real test of our statesmanship, both at home and abroad.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

PRESIDENT

McGraw-Hill Publishing Company, Inc.

TEXTILE WORLD
March, 1954 • Vol. 104 - No. 3

Typical Jobs That Former Apprentices Now Hold at Forstmann Woolen Co.

Present position	*Year graduated*
Wool top dyer	1949
Quality-control supervisor	1938
Assistant overseer, worsted drawing	1938
Assistant director of wool purchasing	1941
Manager, safety and health department	1938
Warp-starter supervisors	1940, 1941, 1950, 1951
Foremen, drawing department	1940, 1949
Chief cloth inspector, finishing mill	1950
Cost analysts	1950, 1952
Assistant manager, knitwear control department	1949
Production supervisors, drawing in	1949, 1950
Production supervisor, warping	1939
Assistant overseer, weaving and preparing	1938
Foreman, weaving	1938

POSITIONS OF RESPONSIBILITY are held today by many graduates of the apprenticeship program. That's why . . .

Forstmann APPRENTICE PROGRAM Pays Off Over the Years

▶A three-year program to provide trained young men to replace retiring employees works well. Apprentices move on a definite schedule.

▶After three years of going through his selected area of training and three nights per week of classes, the trainee is graduated.

▶Each year's top man gets a free year anywhere he wants—textile school, machinery manufacturer, or research laboratory.

▶A high percentage of program graduates have remained with the company over the years.

By RICHARD C. SCOTT

A THREE-YEAR PROGRAM to provide the mill with a source of new blood to replace retiring employees and to give 8 or 10 young men each year an opportunity to learn woolen and worsted methods, techniques, and processes has been running successfully since before World War II at Forstmann Woolen Co., Passaic, N. J.

In the beginning, the program was informal. Since the war, the program

has been formalized. Both the com- **Apprentice Wage Rates**

Apprentice Performance Rating

Name _____ Dept. _____

Factor	Above Average	Average	Below Average	Unsatisfactory
LEARNING ABILITY Measures his ability to learn the job. His interest shown in learning. His progress on the various phases of his job.	☐ Able to grasp easily what he is required to learn. Demonstrates his interest by applying himself to fullest extent. Asks intelligent questions.	☐ Learns the work with little difficulty. Shows interest in work and applies himself well.	☐ Learns slowly but manages to keep up with extra help of supervision. Shows some interest in work.	☐ Does not seem to be able to grasp work. Has no interest in learning.
ADAPTABILITY TO JOB Measures his ability to meet conditions and methods of the job. His adaptability to others.	☐ Is making rapid adjustment to conditions and methods of the job. Adapts himself with ease to supervision and other employees.	☐ Is adjusting himself to routines and discipline of department. Carries out methods of job.	☐ Can adjust himself if given time. Needs to learn how to work with others.	☐ Has difficulty in becoming adjusted to routines and discipline. Does not seem to be able to get along with supervision and other employees.
DEPENDABILITY Measures the amount of follow-up needed to carry out his job as instructed. His dependableness on staying at his work.	☐ When he has learned how to do as instructed, carries out duties carefully. Needs very little follow-up. Always stays at his work.	☐ When he has learned how to do as instructed, needs normal follow-up in order to carry out duties carefully. Keeps at his work quite steadily.	☐ Requires close follow-up. Needs to be reminded to stay at his job.	☐ Needs too much follow-up. Is away from his work place too often.
PERFORMANCE Observation of the apprentice, considering his seriousness, effort, and resulting performance.	☐ Seriousness in getting ahead and effort in job are resulting in excellent performance.	☐ Seriously tries and puts in every effort. Performs his work well. Shows good promise.	☐ Tries hard and sincerely to progress. Needs more time than the average to acquire level of performance. Will improve with time.	☐ Does not exhibit serious effort. Performance is spotty. Improvement is doubtful.

	Yes	No
1. Was the attendance of this apprentice satisfactory?	☐	☐
2. Have you discussed his performance with him?	☐	☐
3. Do you recommended moving him to his next assignment?	☐	☐

4. Remarks:

_____

_____

_____

_____

_____

Rated by foreman _____ Date _____

Checked by overseer _____ Date _____

FOREMAN AND OVERSEER of each department the apprentice goes through evaluate his performance in that department. These and other records on each man are kept on file by the supervisor of training.

has been formalized. Both the company and the apprentice graduates are happy with the results being obtained today.

Benefits Obtained

The company says that since the program has been in effect, the most tangible benefits of the course are that (1) it gives men training as skilled journeymen, (2) it provides trained candidates as possible replacements in technical and supervisory positions, and (3) it has helped to maintain the company's high-quality workmanship.

There is no long-term obligation in the program. The apprentice is not obligated to stay with the company afterwards, and the company is not obligated to offer the apprentice a position after he completes the program. An apprentice's contract can be terminated at any time by either party by a request in writing to the other party.

How the Program Works

If a young man meets the requirements for admission to the program, which begins annually on July 1, and is selected, he is asked to sign an "apprentice agreement" between himself and the company. This agreement states the special conditions of his employment, the time schedule of his training, and his progressive rates of pay.

The training time schedule is spelled out in detail for the guidance of the apprentice and the various department heads. This schedule provides for training time on all operations in the field the apprentice is concentrating on. Such training time may be adjusted to meet special conditions, such as when an apprentice has already worked for some time on one phase of manufacturing and he needs no more training in that phase.

Apprentices are required to spend a minimum of 144 hrs. per year (6 hrs. per week) in classes organized expressly for the training program by the Forstmann Institute.

Before an apprentice leaves one mill area, his immediate supervisors and department head are asked to rate his performance. At this time, the apprentice takes a written exam so that the company can be certain he is ready to advance. If he fails the exam, he must spend in that department or area an additional period of one-half the time normally allotted to that area.

If an apprentice should fail a second examination in that area, the company would consider it advisable to drop him from the entire program.

Apprentice Wage Rates

If he is not already a member, the apprentice must join the union (TWUA-CIO) within 30 days after starting the program, in keeping with the company's union-shop agreement. The starting wage for the apprentice is the official minimum wage rate established by the company's contract with the union.

The rate increases 6¢ an hour at the end of each six months for the first two years, and 12¢ an hour at the end of 2½ years. At the end of his three years of training, the man receives the established rate paid for the job to which he is assigned.

The apprentice never displaces a regular employee in such a way that the latter loses time or pay.

Veterans qualified for educational benefits are eligible to receive a monthly subsistence allowance from the government in addition to their apprentice wages. And if the apprentice wins a post-graduate scholarship, he is allowed to take three years to use it, studying by evening courses instead of during the day, especially if he is married and has a family to support.

Looking Ahead

In building for the future, the company realized that as its 65-year-old men retired it would have to make the apprentice program worth while so that it would attract the best possible young men. The top man in each class is given a year's leave of absence to pursue his studies further—at a textile school of his choice, with a machinery manufacturer, or in some research laboratory—wherever his interest lies.

When the company sends an apprentice graduate out for a year in this manner, it pays for his tuition and living expenses and continues his pay.

Some of the mill's best men coming along now are graduates of the training program. Even if not all the graduates are still with the company—some turnover is inevitable—the mill thinks its program is worth many times its annual cost and would not be without it.

Further Details

Minimum requirements for admission:
- Age: 18 to 21 and on up (older choices, such as veterans and others exceptionally well qualified, at the discretion of the apprentice-selection committee)
- Education: High school
- Health: Must pass a physical examination

Obtaining consideration:
- Candidate must fill out application and submit high school or college record.
- Company checks scholastic record and three references given and then gives candidate a battery of written tests and personal interviews.

Order of selection:
- First, from company employees
- Second, from close relatives of employees
- Third, from others unusually well qualified

Specific fields of study available:
- Wool spinning
- Worsted spinning
- Weaving
- Dyeing
- Finishing
- Machine shop

Subjects Studied by the Apprentice At Forstmann Institute in the Evening

First year
- Raw materials and manufacturing
- Blueprint reading and shop drawing
- Applied mathematics
- First aid

Second year
- Mechanisms
- Textile chemistry
- Effective speaking
- Job-instructor training
- Job-methods training

Third year
- Textile design
- Textile finishing
- Engineering economics

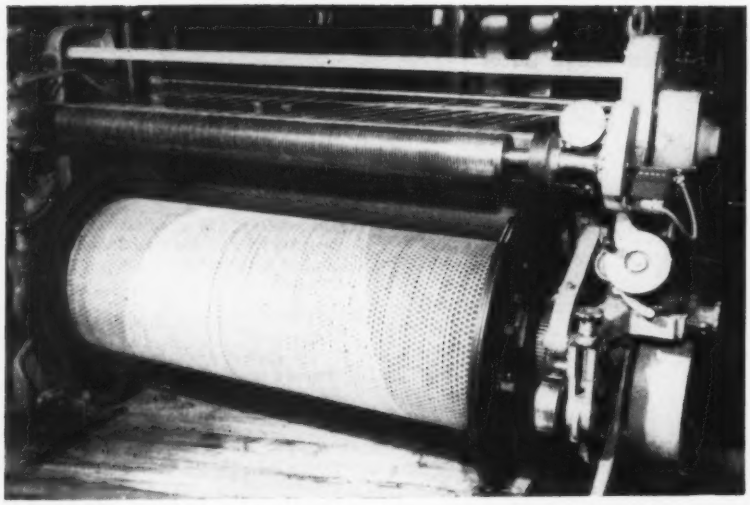
There are 10 instructors on the payroll of the Forstmann Institute, an endowed organization with its own building and teaching facilities.

How Forstmann Selects New Apprentices Each Year

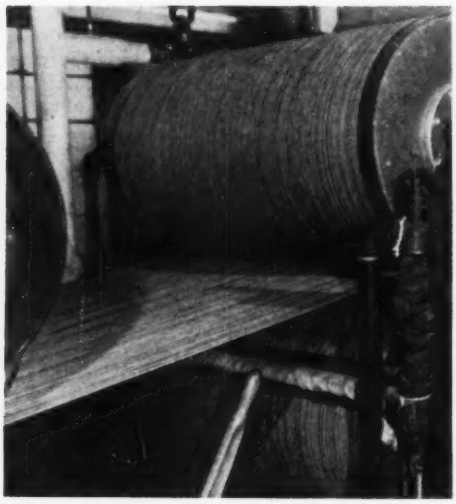
A series of tests is given to each applicant chosen by the apprentice-selection committee, which consists of the mill manager, employment manager, assistant personnel manager, and supervisor of training.

Tests, ranging from easy to difficult, include:
- Bennett mechanical-comprehension test
- Hemnon-Nelson mental-ability test
- Minnesota clerical test
- Bell adjustment-inventory test
- Revised Minnesota paper form
- Kuder preference test
- Purdue peg-board test
- How-to-supervise questions test

Other factors: interest, ambition, age, scholastic record, personal references, medical record, work experience, military experience, and personality.



EVENLY WOUND WARPS come from section beams run on a new Reiner warper at 500 yds. per min. Beam dyeing follows warping.



THIS COCKER PREDRYER on one slasher gives better size penetration on denim warps. The

Stress Yarn Preparation To Weave

When the line of sports denims at a Reeves Brothers mill was expanded to include cloth with several colors of filling, looms were ready to weave the cloth. A series of improvements on yarn-preparation machines eased the load on weaving supervisors to help eliminate defects in the cloth. The improvements that reflect in better weaving include—

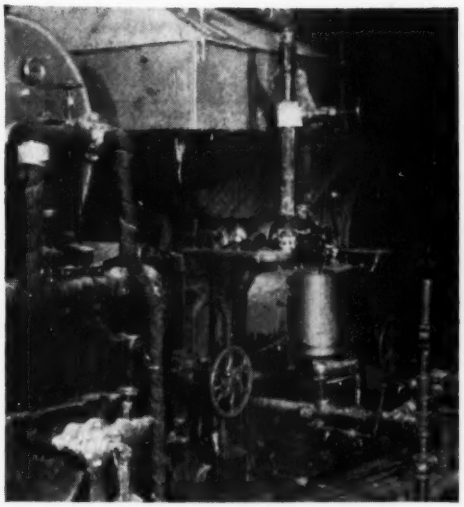
- **More evenly wound warps from a new warper**
- **Fewer crossed warp ends by using a drawing-in machine**
- **Better slashed warps by adding a predryer**
- **Closer filling control by rewinding filling on quillers**

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD

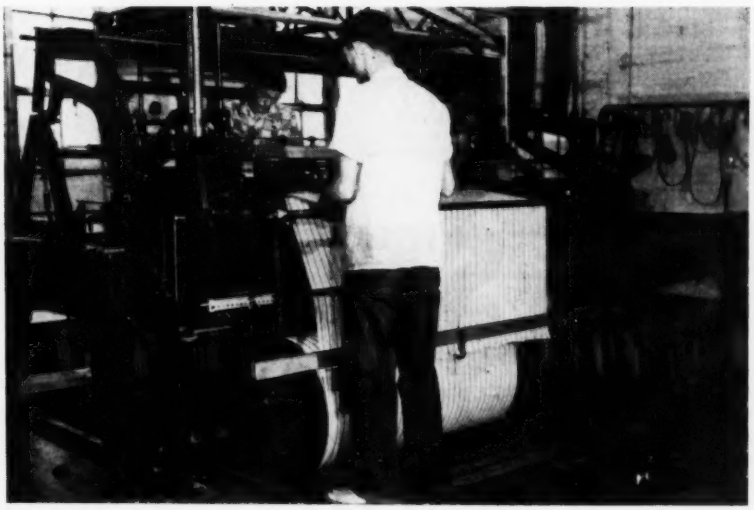
THE ADDITION OF DENIMS with checks to the fabrics woven at the Eagle & Phenix Div. of Reeves Brothers, Inc., at Columbus, Ga., made no great changes in the methods used in weaving or in the looms themselves. But all machines (after spooling) used for preparing both warp and filling yarns were either modernized or replaced to

COLORED FILLING (16½s) is run here on an Abbott quiller alongside white filling (28s). On this 130-unit machine, 22 bobbins per minute are doffed.

A TEMPLATE is used to check the size of the checks in cloth that is being woven on the looms. The foreman checks each loom twice each shift.



weave room benefits in better-running warps and less shedding.



THE WARP IS DRAWN on a Barber-Colman drawing-in machine at the rate of 120 ends per minute. Drawn warps have few crossed ends.

DENIMS WITH CHECKS

help in weaving the denim checks efficiently.

Proper Yarn Preparation Eases Weaving Problems

The two principal defects in plaid sports denims are uneven checks and broken picks. Constant care is taken in weaving to prevent these two defects, but much can be done in yarn preparation to help.

All warps for denim checks are warped on a new Reiner warper. Positively controlled yarn tension as the yarn is wound on the section beam is the first step in preventing uneven checks. Because the tension is the same on each section beam wound on the new warper, loom beams are more evenly tensioned and there are fewer chances of uneven checks in woven cloth.

Another advantage of the warper is that more yards of yarn can be placed on each section beam as a result of the tension-control method. Cut lengths, also, are more easily controlled.

The warper is equipped with a Barber-Colman creel and a special comb. Warper speed is 500 yds. per min.

All section beams for denims are beam dyed. At present, only one beam is dyed at a time, but a new dyehouse is being completed with equipment to dye three beams at once so that colors will be more evenly matched.

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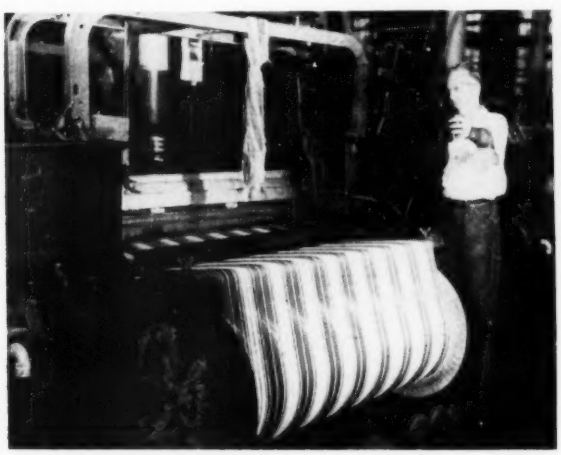
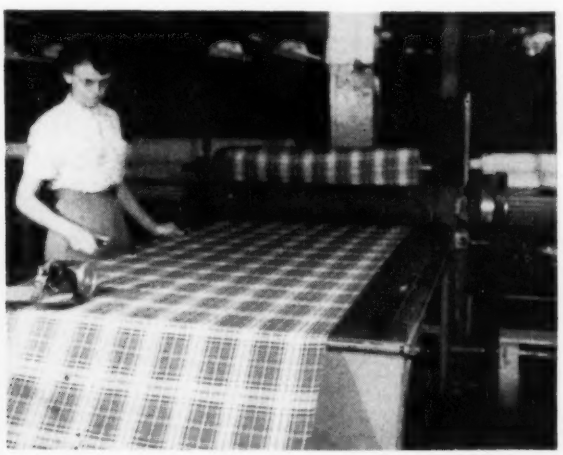


FOR ALL NEW WARPS, box chains and pattern chains are checked to insure that every widthwise and lengthwise repeat measures the same.



MOTORIZED CLOTH INSPECTION on a flat-top table not only speeds inspection but also puts the full width of cloth in easy reach of the inspector.

CHEMICAL FINISHING TECHNIQUES

STIFFENING AGENTS

And How They Work

► The use of chemicals in textile finishing is great, varied, and increasing. Stiffening agents and treatments, discussed here, permit a wide range of end-use fabrics from a relatively few standard gray fabrics.

By A. C. NUESSLE
Rohm & Haas Co.

Finishing is often regarded as an art rather than a science; but in the series of four articles of which the accompanying article is the first, the writer puts finishing on a firm basis of science. He clearly explains the chemical and physical properties of a number of finishing materials and their applications to and reactions with cellulose and various synthetics.

These articles on chemical finishing have been prepared exclusively for TEXTILE WORLD by A. C. Nuessle, director, Textile Applications Laboratory, Rohm & Haas Co. Mr. Nuessle is well known in this country and abroad as an authority on finishing materials and their applications to textiles. As a member of the American Chemical Society, the American Association of Textile Chemists and Colorists, and other scientific bodies, Mr. Nuessle has frequently been called upon to present papers on textile finishing.

We are sure that this series of articles will prove of interest and value to every reader who has any connection with textile finishing.
—C. Norris Rabold, Consulting Editor, TEXTILE WORLD

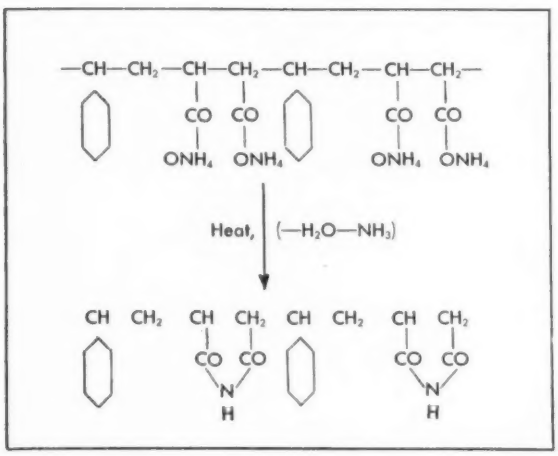


Fig. 1—Insolubilization of styrene-maleic ammonium salt by heat. (The imide (—NH—) formation may also take place between neighboring polymer chains.)

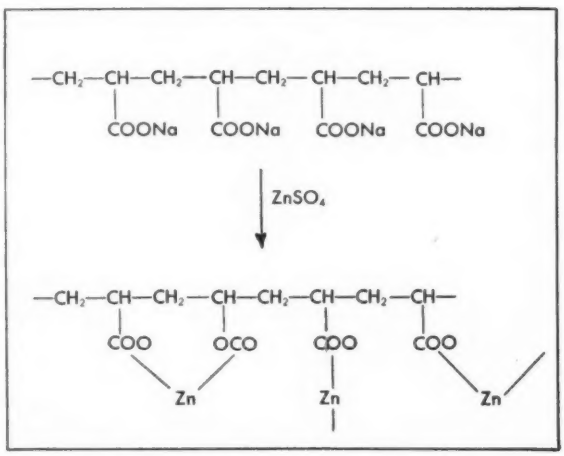


Fig. 2—Insolubilization of sodium polyacrylate with metal salts. (Here, also, crosslinking can occur between neighboring polymer chains.)

THE TEXTILE INDUSTRY is probably unsurpassed in the variety of chemicals it uses. Heavy chemicals such as caustic soda, sulfuric acid, chlorine, and sodium hydrosulfite, talc, clay, and various pigments compose one class. The biochemicals, enzymes, starches, gums, certain waxes, natural fibers, and dyestuffs such as indigo form a second. The largest group of all—the wholly or partly synthetic organics—includes surfactants, most dyestuffs, water repellents, and the host of synthetic resins.

Some of these chemicals are used in the production of the textile fibers themselves. The family of fibers includes inorganics (glass), biochemicals (cotton, wool, silk, linen), and synthetic organics (nylon, Orlon, Dacron, etc.). Other chemicals are used in spinning fibers into yarn or weaving yarns into fabric; still others in bleaching, scouring, or other preparatory processes; and in dyeing or printing and finishing.

What Is a Finish?

Finishing is a final treatment, chemical or mechanical in nature, that adds to utility or serviceability of a fabric or to improved appearance or feel. The utility finishes (shrink-resistant and water-repellent treatments, for example) serve in a very practical way. On the other hand, finishes that improve appearance or feel (such as crease resistance, luster, crispness or softness, etc.) appeal more to esthetic senses.

The American public is more interested in, and will generally pay more for, a finish that can be seen or felt than in one that serves them in a less spectacular manner. This trait of consumers is one reason why dyeing and printing are such important operations.

Finishing Chemicals

The AATCC Yearbook lists hundreds of finishing agents for a score of uses. Thus, we have many types of chemicals for applications to fabrics of many types of fibers to perform a variety of functions.

A single chemical can often perform several distinct functions. For example, caustic soda may be used in mercerizing and kier-boiling cotton, shrinkproofing rayon, scouring nylon, feltproofing wool, and—according to a recent patent—in making an exceedingly sheer Dacron fabric by partially dissolving away the fibers in a moderately sheer fabric.

Conversely, two diverse chemical substances may sometimes perform the same function.

Classifying chemicals and treatments by fiber type would cause considerable duplication. For example, treatments for rayon would, for the most part, be applicable to cotton. The identity of the fiber being treated, however, determines the type of finish obtained.

In this regard, the most important characteristic is that of accessibility: cotton and rayon are very hydrophilic; the fibers soak up water and swell. It is therefore possible to obtain internal modification of such fibers through the use of chemicals that can penetrate into the interior. Wool is slightly more difficult to penetrate (because of the fiber surface layers or skins) and acetate still more so. Nylon, Orlon, and most of the newer synthetics are quite hydrophobic; the fibers do not swell in water, and it is very difficult to obtain internal modification; so only the surface effects are commonly obtained.

The emphasis in this article will be placed on function. A number of typical finishes have been selected. In each case we will consider which fibers require such a finish and what types of chemicals will produce it and try to explain where the chemical goes and how it operates to impart the finish.

Bodying and Stiffening Effects

Bodying and stiffening agents, properly used, permit textile manufacturers to weave a relatively few standard fabrics. The hand is later modified to meet the fashion trend.

A textile fabric is soft and flexible because it is made up of many tiny fibers that, unlike the fibers in paper or leather, have considerable freedom of motion relative to one another. Even fabrics made of very stiff fibers, such as glass, will be flexible as long as the fibers are free to slide past each other. A stiffening agent does not penetrate the fibers; it binds the fibers together within the yarns, restricts their motion, and stiffens the yarns. The warp and filling yarns are also bonded at the crossover points, form a rigid network, and further stiffen the fabric.

In most cases, both fiber-to-fiber and yarn-to-yarn bonds are obtained. The two actions can be separated (and to a

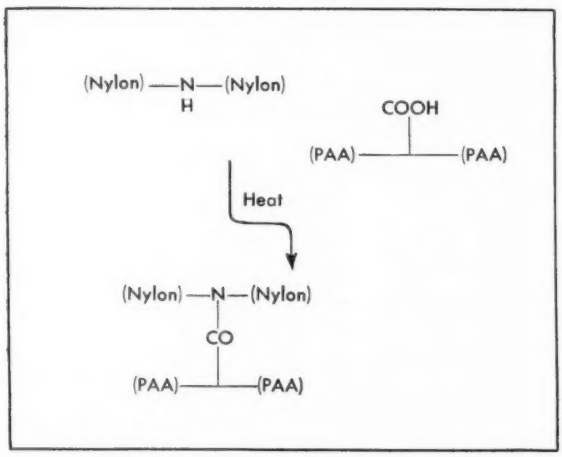


Fig. 3—Reaction of polyacrylic acid with nylon (simplified sketch showing one of several possible mechanisms).

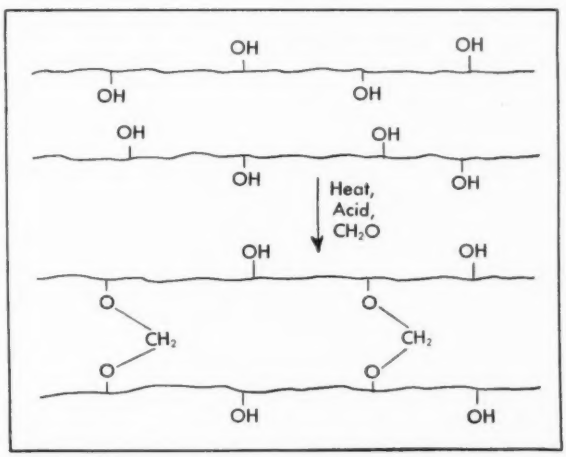


Fig. 4—Insolubilization of polyvinyl alcohol by crosslinking with formaldehyde. (The wavy lines represent the polymer chains, from which the solubilizing —OH groups extend.)

certain extent controlled) in the following manner: (1) If the size mix is sufficiently viscous, there will be little penetration into the yarns, and most of the stiffening will result from bonding the yarns to each other. (2) If the size mix is fluid enough to penetrate into the yarns and the fabric is then dried on a swing- or jig-frame, the reciprocating motion of the fabric will prevent formation of yarn-to-yarn bonds, and most of the stiffening will be caused by fiber bonding within the yarns.

The latter type of stiffening generally gives the more pleasing hand, although the over-all firmness will not be as great as when both types of bonds are present.

To perform such a bonding operation, the chemical agent must have sufficient cohesion (i.e., be film forming) and be capable of adhering to the fibers. A material that penetrates completely into the individual fibers and stiffens them does not appreciably stiffen the fabric.

Water-Soluble Polymers

Though chemically diverse, these materials have two features in common: each is a linear polymer of high molecular weight, and each contains a considerable proportion of strongly hydrophilic groups that confer water solubility to the molecule. Common water-soluble polymers, such as polyvinyl alcohol and sodium polyacrylate, have the solubilizing groups spaced along the polymer chain. The affinity of such groups for water causes the entire molecule to be soluble.

The most common hydrophilic groups are hydroxyl (–OH), carboxyl or carboxylic salts (–COOH or –COONa, etc.), or amino groups (–NH_2 or –NH–).

Some representative water-soluble polymers and the hydrophilic constituents of each are:

- Natural-occurring
  - Starches –OH
  - Gums –OH, –COOH
  - Gelatin –NH–, –NH_2, –COOH
  - Casein –NH–, –NH_2, –COOH
- Partly synthetic
  - Hydroxyethyl cellulose –OH
  - Carboxymethyl cellulose –COOH (–COONa)
  - Starch ethers –OH, –OCH_2CH_2OH
- Wholly synthetic
  - Polyvinyl –OH
  - Polyacrylic acid –COOH
  - Styrene-maleic copolymer –COOH (–COONa)

We will make no distinction here between solubility in water and solubility in dilute acid or alkali. It should be recognized, however, that the carboxyl-containing materials are sometimes soluble in the acid form, such as polyacrylic acid, and sometimes soluble only in salt form, such as the sodium salt of carboxymethyl cellulose. Casein, which is amphoteric (contains both acidic and basic groups), is more soluble in either the acid or alkaline form than it is at the iso-electric, or neutral, point.

Regardless of the exact manner in which the material is solubilized, each of these substances, when dried down, will form a stiff film. The reason for this film-forming is evident: the same strongly polar groups that cause the polymer to be soluble in water will, in the absence of water, bind the molecules together into a rigid network. As a general rule with few exceptions, in the absence of a plasticizer a water-soluble polymer is never rubbery.

What Properties Affect Usability?

Each of these materials when applied to fabric will cement the fibers and yarns together with stiff, unyielding bonds. Accordingly, each imparts a firm finish, provided that adhesion to the fiber is sufficient.

The importance of proper adhesion may be illustrated by comparing the effect of polyacrylic acid and sodium polyacrylate on nylon. These polymers differ only in that one contains free carboxyls (–COOH) while the other has been neutralized (–COONa). Applied to nylon, the neutralized form not only gives a somewhat lower degree of stiffness but readily crazes, or cracks off, as when scratched with the fingernail. Conditions necessary for crazing are that the polymer be brittle and the adhesion be insufficient to withstand the abrading force. Polyacrylic acid, which has excellent adhesion, does not craze.

Other factors than adhesion influence the exact type of hand that is obtained.

The starches possess certain small but real differences. Smoothness and flexibility will vary in corn, wheat, or potato starch. It is not known whether this condition reflects differences in the film-forming characteristics or merely differences in degree of penetration into the yarn.

Among the chemically modified starches (thin-boiling starches and dextrines), increased stiffness may accompany better penetration and decreased stiffness may accompany excessive degradation of the starch so that it no longer forms a satisfactory film. Incidentally, glucose—the product of complete hydrolysis of starch into monomeric form—is a hygroscopic material often used as a weighting agent because of the soft, pliant hand it produces.

Disregarding minor differences, all starches impart a finish that may grossly be described as stiff—a fact quite generally true of all other water-soluble polymers of reasonably high chain length.

Another consideration is washfastness. Because the polymers are water soluble, the finish will not be washfast unless it can be insolubilized in some special way. Typical methods for insolubilization are:

1. Effect of heat on the ammonium salt of certain –COOH copolymers such as styrenemaleic (Fig. 1)
2. Effect of polyvalent metal salts (Ca, Zn, Al) on –COOH polymers such as sodium polyacrylate (Fig. 2) (This reaction usually requires a two-bath treatment.)
3. Rarely, by reaction of a polymer with the fiber, such as polyacrylic acid on nylon (Fig. 3) (This process requires a severe cure.)
4. Most important, the reaction of formaldehyde or formaldehyde resins with –OH groups such as starch, hydroxyethyl cellulose, and polyvinyl alcohol, or with –NH– groups such as gelatin and casein (Fig. 4)

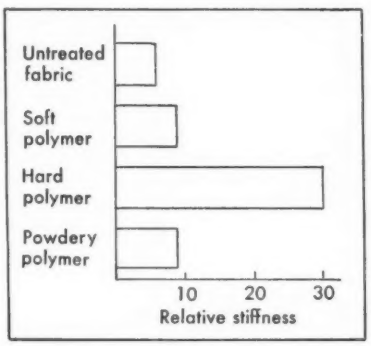


Fig. 5—Relative stiffness imparted to fabric by thermoplastic resins of varying hardness.

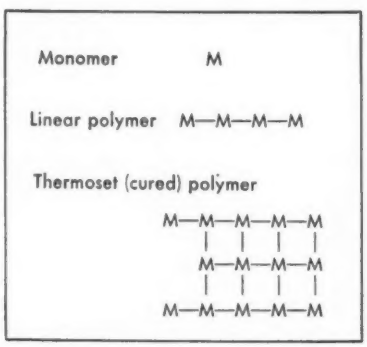


Fig. 6—Schematic representation of the degrees of condensation of thermosetting resins.

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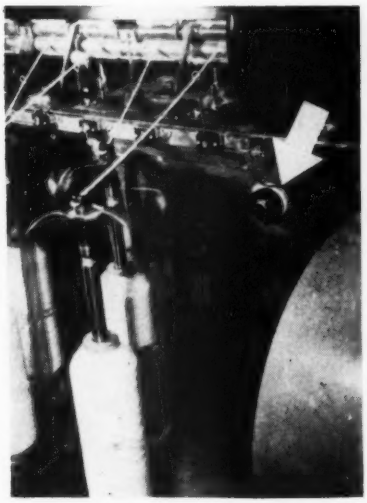
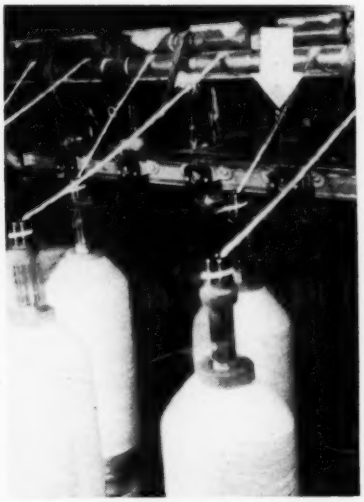
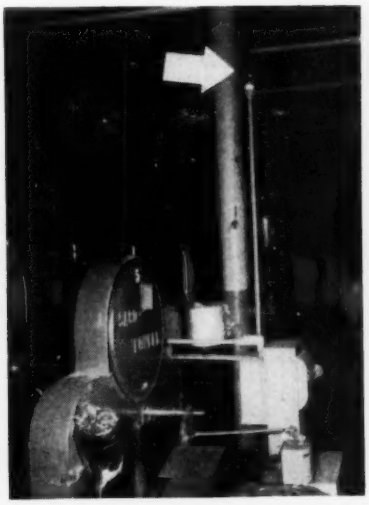


KNOCK-OFF WIRES are set so that roving passes through the center of the eyelet. A broken sliver sets off the action.



SWITCH (arrow) on the right-hand side of the roving frame cuts out the stop motion when the frame is being started.



SIGNAL LAMP (arrow) on the end of the roving frame flashes when the machine stops to draw the attention of the tender.

ROVING STOP MOTION Cuts Spinning Ends Down 10%

An electric stop motion for roving frames at Woodside Mills features—

- **A switch for preventing stops at traverse changes**
- **A switch to cut out the stop motion at the start-up**

Advantages of the stop motion are—

- **Increased work assignments**
- **Higher production**
- **Reduced choke-ups and lapping up**
- **Better spinning**

By JAMES H. BLORE
Assistant Editor, TEXTILE WORLD

AN ELECTRIC STOP MOTION installed on roving frames by Adams, Inc., at Woodside Mills, Fountain Inn, S. C., has increased work assignments and reduced choke-ups and lapping up. Ends down in spinning have been reduced 10% by the better roving.

How the Stop Motion Works

Between the front rolls and the flyer, the roving is threaded through a porcelain eye at the top of a wire that is kept in a vertical position by the roving itself. If the roving breaks or if the sliver runs out, the wire loses its support and drops to one side. A contact is made in the box to which the wire is attached, and the frame stops.

Each time the frame stops, a small relay in the main switch box flashes a signal light to the operator.

The operator flips a switch to shut off the stop motion at the doff and connects it again when one layer of roving has been wound on the bobbins. This time lapse allows all the stop-motion wires to pick up to the vertical position.

If the stop motion operated while the traverse was changing, a lot of ends would break. So a Micro switch disconnects the stop motion during this time. Two dogs screwed to the builder motion contact the limit switch during the traverse change.

How It Was Installed

The stop motions were partly assembled when they were received at the mill, and an electrician and two helpers completed an installation on one 72-spindle Saco-Lowell 12x6 frame in a few hours.

The stop-motion units arrived at the mill in groups of eight fastened to an insulator strip designed to be attached to the breastbeam. The units were spaced to align with the spindles.

Two copper strips run along the insulator to join each stop-motion unit.

The insulators were screwed to the breastbeam with about ½ in. between the sets of eight. The copper strips were soldered together across this open

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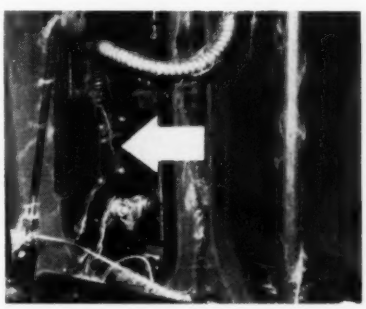
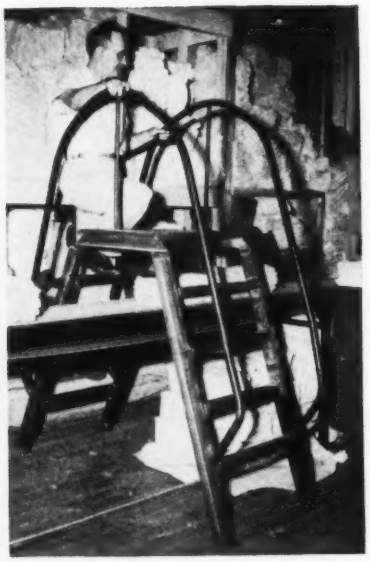


LIMIT SWITCH (arrow) near the builder motion prevents the frame from stopping when the end of the traverse is reached.

A DOUBLE-WIDTH BELT divides the sewing room. Bundles destined for the left side of the warehouse go on the left side of the belt and are automatically routed to that area by the divider.



PORTABLE STEPS of channel-iron construction are used to cross the room-length belts. Handrails are a safety measure.

Dundee's CONVEYOR System Keeps Finished Goods Flowing

This conveyor system extends from the sewing room into an old warehouse and throughout four stories of a new five-story warehouse. Even with all this coverage, the conveyor does everything it's supposed to do. It—

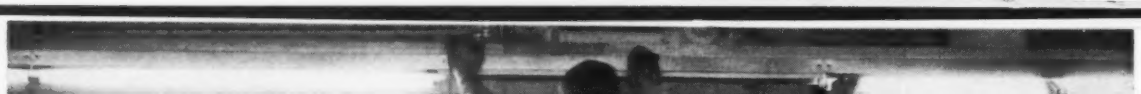
- **Eliminates storing goods in boxes and carts**
- **Saves floor space that's now used for manufacturing**
- **Reduces manual lifting and cuts costs**

By E. DALTON WHITE

THE CONVEYOR SYSTEM at Dundee Mills' Lowell Bleachery South, Griffin, Ga., transfers finished goods from the sewing room to the wrapping and shipping departments and from there to most storage areas in two warehouses.

THE WRAPPING DEPARTMENT gets a constant flow of stock from the conveyor. Bundles are transferred to the wrapping tables by hand, the second manual handling in the entire system.

DOUBLE DUTY is done by the conveyor in the wrapping department because wrapped packages are carried out by the returning bottom section of the belt.



The system is coordinated so that it functions continuously throughout the warehouses, and many of the points of transfer of materials are fully automatic. For example, lateral belts along the storage bins receive their loads from another belt controlled by a baffle.

The conveyor system is in continuous operation and does not require an operator.

How the Goods Flow

The natural flow of finished goods, tied in bunches, is from the sewing room to an open-stock room where different materials are stored in bins until case lots are accumulated. The case lots are sent on the same conveyor system to the wrapping department.

Goods are wrapped in bundles and labeled with stock number and style number.

From the wrapping department, the packaged goods are either returned to the wrapped-package storage room (on the lower side of the same belt that originally carried them to the wrapping department) or sent directly to the shipping department. In either case, the goods have required no handling other than being placed on and off the belts.

The conveyor system and the storage system are laid out so that orders for goods of single styles or orders for goods of an assortment of styles and colors can be quickly assembled and sent in a steady stream to the shipping department. Special orders that require immediate shipment can be assembled without delay.

The conveyor system travels through four of the five floors of a new warehouse at 60 ft. per min. Fifteen-inch belts of four-ply canvas are used on all units except the last inclined conveyor, which is rubber coated to prevent slippage of packaged goods.

The belts travel on slider beds with pulleys of 12-in. dia. at each end. Feeder belts and belts to other departments also travel at 60 ft. per min.

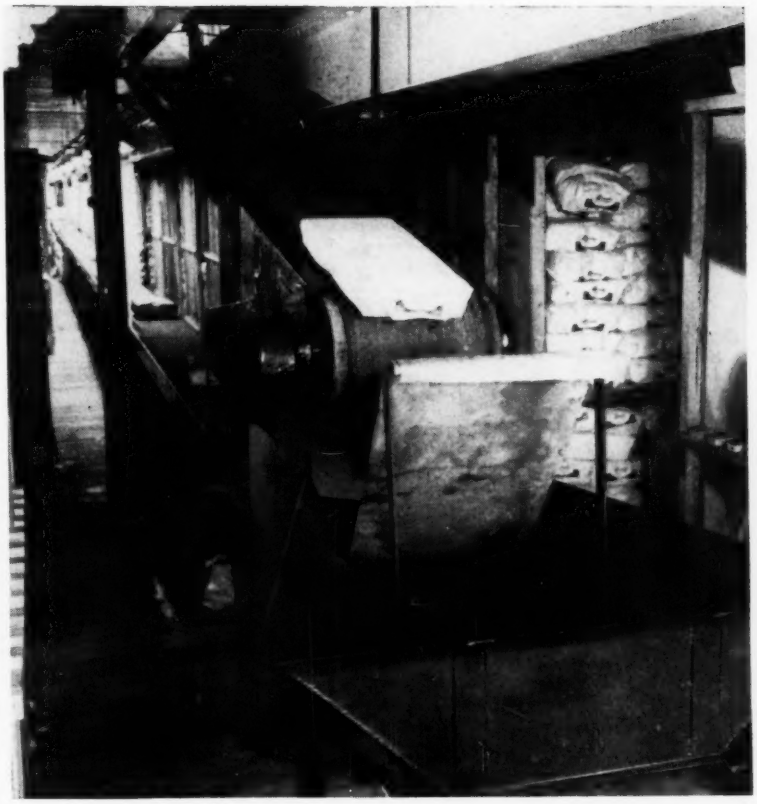
New Warehouse Fits Conveyor

The new warehouse was designed to fit in with the conveyor system. Aisles normally 8 ft. wide when trucks are used were made 5 ft. wide.

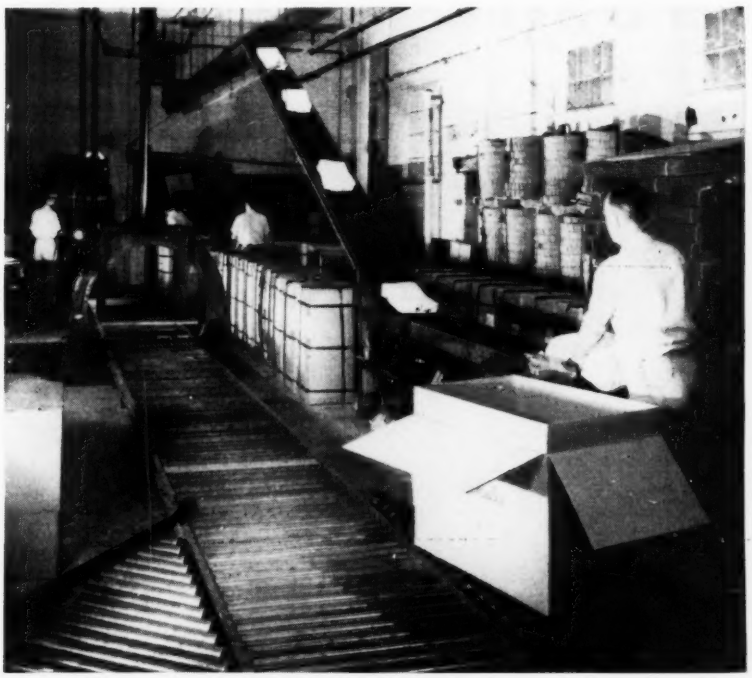
The over-all width of the conveyor is 22 ins.; so there is 18 ins. on each side for workers to gather goods from storage areas and place them on the conveyor.

Since no trucks have to be pushed between the storage bins, the bins are close together to save additional floor space.

Little maintenance is required for the system. Once-a-month lubrication is the greatest maintenance cost.



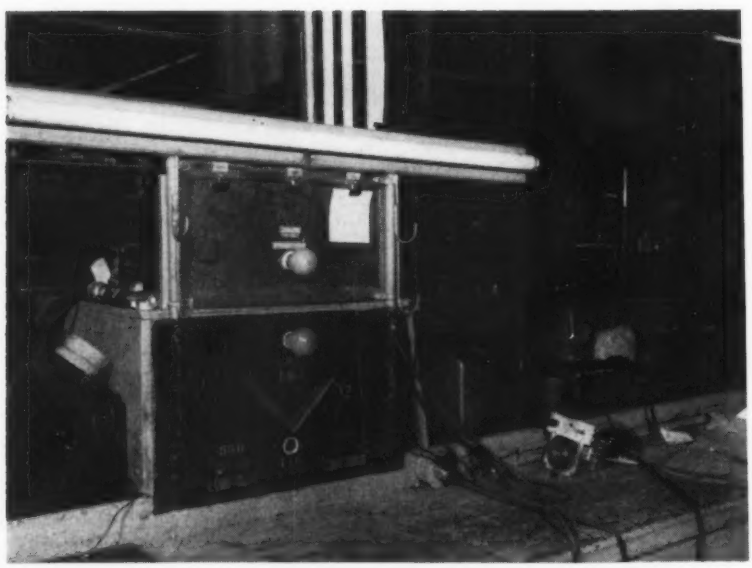
METAL BAFFLES prevent damage to packages when the packages are received from an upper floor. Packages reverse their direction at this point.



OFF THE CONVEYOR, into cartons, through the automatic strapping machine, and out the door is the procedure at the end of the line.

GROUP REPLACEMENT of lamps includes cleaning the fixtures, adding Watchdog starters if they're not already there, putting in new tubes, and fastening the tubes with tube locks. Two men form the labor crew.

$24,500 Worth of LIGHT For a Net Cost of $144



TESTING STATION on a workbench in the mill electric shop helps select reusable tubes. The fixture is equipped with manual starters. When the tube is lighted, defects show as discolorations at the ends.

Group replacement of fluorescent lamps at Hathaway Mfg. Co. costs $15,747 a year, but the saving in lamps and starters recovers all but $144 of that amount. As a bonus, the mill gets $24,500 worth of extra light for the same power bill. Tests at the mill show—

- **Many removed lamps still have 65% of original life**
- **Lamps last more than 7,500 hrs.**
- **New-type starters and tube clamps insure full lamp life**
- **Lamps work best at 118 v.**

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD

Cleaning, Alone, Doesn't Help

GROUP LAMP REPLACEMENT, scientific lamp cleaning, and replacement of starters and tube locks at Hathaway Mfg. Co., New Bedford, Mass., have resulted in $24,500 worth of additional light at a cost of only $144 a year more than the old spot-checking system. That's a small increase when you consider that the annual cost of lighting at the mill is nearly $100,000. The new program has been in effect for two years.

First Test Was in Weave Room

The first test on group lamp replacement was run in a weave room containing 1,624 fluorescent lamps (and an additional 60 lamps in an adjoining locker room). General Electric engineers cooperated with Hathaway's plant engineer, Edmund J. Sylvia, in making this test in an area containing about 7.5% of the lamps in the mill.

All lamps in the test area were replaced and the fixtures cleaned. Standard starters that had not been previously replaced were replaced with the Watchdog Cutout type. Tube locks were also placed on every lamp. The labor cost for this program was less than 10½¢ per lamp. One hundred manhours (at $1.75 per hr.) were required to do the work.

Ten percent of the used lamps (168) were held to be used for replacements for normal burnouts. Special facilities were set up in the mill electric shop to select the best lamps of the used group.

At the same time new tubes were installed in the test area, slightly low voltage conditions were corrected with voltage boosters to bring the voltage up to an average of 118 v. This test, and other previous ones at Hathaway, have shown that 118 v. is ideal for fluorescent lamps. Since this test, voltage is checked once each year to be sure it is held at 116 to 118 v.

Foot-Candles Increased 25%

Foot-candle readings were made at about 40 stations throughout the room before the test was started. The foot-candle average was 19. A reading taken after the new lamps were installed showed 31.5 ft.-c. Monthly foot-candle readings were taken, and at the end of 12 months the foot-candle reading had dropped to 20.2. During the 12-month test period, a total of 25% more illumination was realized with no additional fixtures or power consumption.

The lights were operated 96 hrs. per week for a total of 5,000 hrs. during the 12-month test period. Accurate records were kept of lamp and starter replacements, labor and parts costs of the replacements, and power consumed.

After 12 months of operation under test conditions, fixtures in an area 100x100 ft. were cleaned, and foot-candle readings taken in that area showed a gain in light of only 1.3 ft.-c. (approximately 6½%) as a result of the cleaning.

The test showed that a planned maintenance program for the lighting fixtures of the entire plant would result in increased illumination at practically no increased cost over the old spot-checking light-replacement program.

How Program Was Extended

A new program was organized to clean all fixtures and replace all tubes in manufacturing departments area by area. It was not practical to keep the detailed records that were maintained in the test area, but records for a complete cost analysis were kept.

Two men form the group lamp-replacement and lamp-cleaning crew. They are hour hands and will become electricians after further training. They work on the lamp-replacement program three days a week and do other electrical work the other days to break the monotony of the work.

When the lamps are to be replaced in a department, the crew men start at one side of the department and work across the room until it is finished. Each man works separately, and stepladders are used rather than scaffolds to prevent interfering with production.

New tubes are supplied in a truck that also contains a compartment for old tubes. The lighting fixtures are cleaned with a damp cloth and a foaming-type household cleaner. Then they are wiped dry with a dry cloth.

Starters are added where needed, and tube clamps are added to every fixture. Each man averages replacing

A STORAGE BIN holds enough tubes, selected from removed ones, to be used for all spot-check replacements. Tubes are cleaned and ready to be used. Life of these tubes is 65% of new ones.

DISCARDED TUBES are safely destroyed in this device made at Hathaway. William Feldon wears a plastic face guard as he presses a tube into the device that "chews" tubes into small pieces.

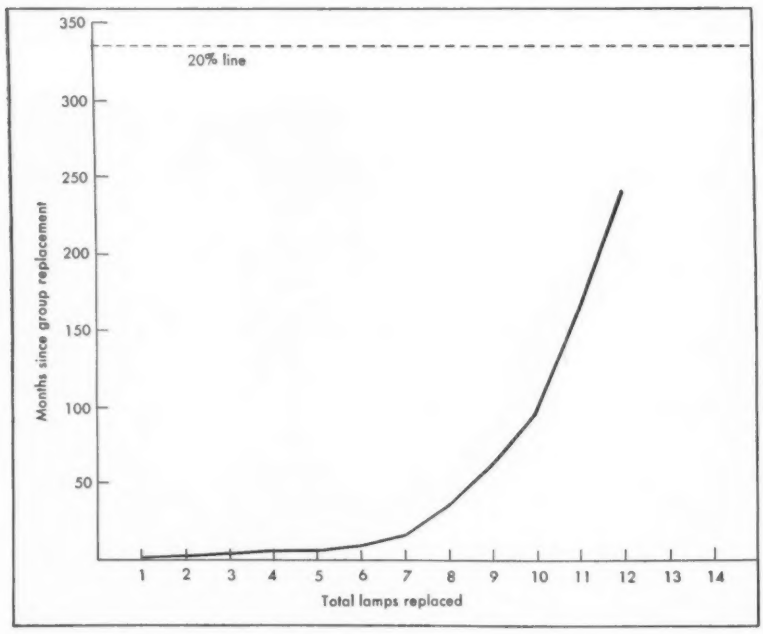
THE TRUCK used in lamp replacement is designed to carry a stepladder, new and used tubes, extra starters, tube clamps, and cleaning materials. It's narrow enough to go easily in all alleys throughout the mill.

the lamps in 152 single fixtures each 8-hr. day. The labor cost is about 10½¢ per fixture.

Records of part of the work (Plant A) show that in one 16-manhour period, 207 tubes and 71 starters were replaced in addition to placing lock clamps on the tubes. In another 16-hr. period, 519 tubes and 39 starters were changed. In 438 manhours, 8,740 tubes and 1,373 starters were changed.

In another group (Plant B), 7,431 tubes and 510 starters were changed in 273 manhours.

When the group-replacement program was completed in the entire plant (a few sections in nonproduction areas were not included in the program), a schedule was set up to replace burned-out lamps once each week.



GRAPH LIKE THIS is kept for each group-replacement area. All lamps are replaced again when the curve reaches the 20% mark. In this example, 1,671 lamps were replaced initially; so group replacement will take place again when 334 lamps have been replaced in the monthly checks.

Cleaning, Alone, Doesn't Help

One man makes a complete cycle of the plant once each week and replaces bad tubes and starters. He keeps a record of every tube and starter he replaces. A timestudy of the operation shows that it costs 10.4¢ to replace each tube or starter in a fixture. Both tube and starter can be replaced in a single fixture for the 10.4¢ figure.

The spot-check operator uses the same truck and stepladder used for group replacement of tubes. In place of new tubes, he uses the ones reclaimed from group replacements.

Here's how the lights and tubes replaced in one month since the group-replacement program was finished compare with replacements before the program started: 248 tubes and 43 starters were replaced in Nov., 1953; before the program, 1,600 tubes were replaced each month.

Because there was a gain of only 1.3 ft.-c. (approximately 6½%) when lights were cleaned at the end of the 12-month test period, Mr. Sylvia and his study panel decided that a one-year cleaning cycle would be too often. Instead, a schedule was worked out to clean and replace all lamps in a department when 20% of the tubes have been replaced.

Tubes Last 7,500 Hrs.

Records are kept by the electrical-department supervisor, George C. Potter, and forwarded to the engineering department for each tube replaced in each building. These records come from the reports of the man making spot-check replacements. A graph made for each building includes the dates the lamps were cleaned and tubes changed. Each month, the tubes replaced are added to the graph and a curve drawn to show the extent of the replacement. A mark is made at a point on the graph to show 20% of the tubes. When the replacement curve reaches the 20% mark, the lamps are all cleaned again and all the tubes are replaced. This marks the point at which the cycle is repeated.

Here's another good example of the extent of spot replacement of tubes: The first year after replacement of lamps is one building, 240 tubes were replaced. Twenty percent replacement of the tubes (337 of the 1,684) must be reached before the cleaning and replacement cycle is repeated.

Before the new program, 15,000 tubes were replaced in the mill in 15 months. During the first nine months after replacement in every

building, only 2,452 tubes were replaced.

Hathaway now buys tubes only once each year. All tubes are 40-w., 4-ft. General Electric white fluorescent lamps. The average life of the lamps at Hathaway since the completion of the program is 7,500 hrs.

How Lamp Changing Improved

During the program, Hathaway developed methods and tools to speed up changing the lamps, to test used tubes, and to destroy bad tubes safely.

A storage rack for reusable tubes is located in the electric shop. A special truck was designed to be easily transported through the alleys in all mill departments. The truck has spaces for old and new tubes, starters, tube clamps, cleaning materials, and a stepladder.

The first step in selecting the best lamps is to throw away all tubes discolored at the end. A tube-testing station with a manual starter is located on a workbench in the shop. Tubes are quickly placed in special fixtures at the station, power is turned on, and weak tubes show discolorations. The weak tubes are discarded. Lamps saved after being checked with these methods still have 65% of average lamp life.

Tubes to be kept for replacements are cleaned 30 to 40 at a time in a sink used only for that purpose. Household ammonia is used in faucet-temperature water, and the tubes are placed in the water and left for about 10 mins. Then they're removed and wiped dry with a dry cloth. That's all the cleaning necessary.

Bad tubes are broken in the machine shop in empty oil drums with a device designed and made at Hathaway. While tubes are being broken, one of the men of the replacement crew wears a plastic face shield and places the end of a tube in a hole in the cover of the oil drum. Two pieces of angle iron 18 ins. long are welded to the edge of the hole and extend vertically to guide the tube.

When the employee taps the end of the tube downward, the tube strikes a spring-loaded plunger that moves a spike-pointed lever against the tube. The lever "chews" the tube into small pieces.

Drums filled with broken glass are stored and later removed to the city dump. The device is lifted from the filled drum and placed on another empty one to break more tubes.

This method works well and without danger to employees as it is, but Hathaway engineers have designed another device that will feed the tubes mechanically.

Monthly Replacements

Month	1950 (Before)		1951 (After)		
	Lamps	Starters	Lamps	Starters	Average foot-candles
1	202	32	1	5	31.5
2	270	60	—	5	25.7
3	93	6	2	—	25.2
4	150	51	—	1	25.2
5	193	32	—	—	24.0
6	147	34	—	2	23.0
7	183	31	3	—	22.8
8	196	33	—	—	22.4
9	173	22	42	12	21.5
10	196	31	—	—	21.7
11	207	33	40	—	21.0
12	180	50	52	6	20.2
Total	2,190	415	140	31	23.7 Average

THE FIRST TEST was run in a weave room and showed only 140 replaced tubes during the first year after group replacement. The year before the test 2,190 tubes were replaced. Foot-candle average was raised from 19 to 23.7.

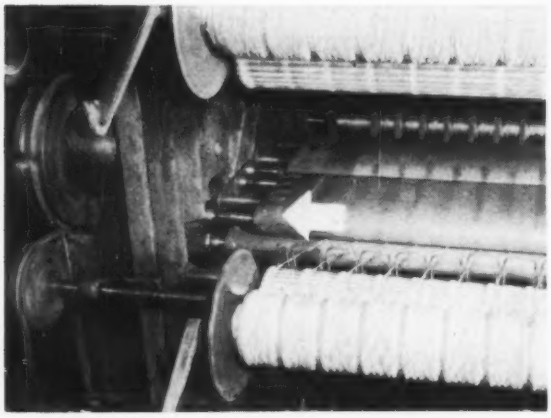
Cost Analysis for Group-Replacement Program

	1950 (Before)	1952-1953 (After)
A. Number of lamps replaced	15,966[1]	1,344[2]
B. Number of starters replaced	3,642[1]	1,617[2]
C. Net cost of replacement of lamps at $0.751	$11,990.47	$ 100.93[3]
D. Relamping labor cost at $0.104	$ 1,660.46	$ 139.78
E. Net cost of replacement of starters at $0.432	$ 1,573.43	$ 698.54
F. Starter labor cost at $0.104	$ 378.77	$ 168.17
G. Total net cost of group replacement and cleaning		$14,639.66
H. Total annual maintenance cost (C through G)	$15,603.04	$15,747.08
I. Annual electric energy cost— 4,851,000 kwhr. at $0.0125	$60,637.50	$60,637.50[5]
J. Total annual operating cost (H plus I)	$76,240.54	$76,384.58
K. Annual owning cost ($187,583.60X12½%)	$23,447.95[4]	$23,447.95[4]
L. Total annual cost of light (J plus K)	$99,688.49	$99.832.53[5]
M. Average foot-candles (previous test)	19	23.7
N. Cost per average foot-candle year	$ 5,246.76	$ 4,212.34[5]
O. Relative cost for equal foot-candles	$124,348.21	$99,832.53
P. Net value of group-replacement program— $24,515.68		

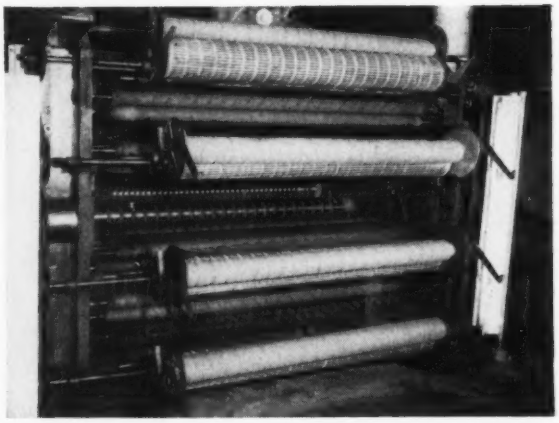
[1] Prorated from records for percentage of fixtures involved
[2] Calculated from previous test data
[3] These lamps can be reused for 10 group replacement periods (1/10 cost)
[4] 12½% of original purchase price of installation includes interest, taxes, and insurance on investment to amortize in 10 years
[5] Based on 6,000 hrs. per year

A TWO-YEAR TEST shows that only 1,344 lamps were replaced after group replacement, and these lamps were reclaimed ones. The year before the test, 15,966 lamps were replaced. Item H shows the $144 difference, and Item P is the net gain.

See-Through Textile Packages



LEATHER BUTTONS are riveted to the apron edges to prevent lateral slippage. The edges are not built up as high as the composition facing so that the edges do not rub together.

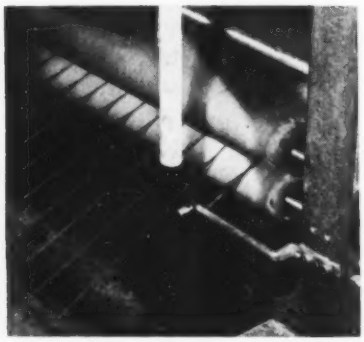


NEW 60x60-IN. CARDS are equipped with double aprons with 10-in. centers. Older 48x60-in. cards at the Thompsonville plant have triple aprons with 7¼-in. centers.

Composition Wool-Card RUB APRONS Increase Production and Reduce Soiling

- **Bigelow-Sanford has been running composition-rubber rub aprons for six years on 56 cards**
- **With 15 colors in process, the biggest advantage of the aprons is the elimination of the soiling problem**
- **The aprons give more rub, and card production has been increased 20%**

By THOMAS B. WINSTON
Assistant Editor, TEXTILE WORLD



SUCTION PIPE takes away waste end to keep it from wrapping around the ends of the apron. If an end gets wrapped around a leather button, the button will tear and the apron will stretch.

FIFTY-SIX WOOLEN CARDS have been running with composition-rubber rub aprons for the last six years at Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn. According to E. W. Galinat, superintendent of yarn making, card production is 20% higher and the problem of apron soiling has been licked.

The Thompsonville plant has four sections of cards, 14 sets to a section. Three sections are Davis & Furber 48x60-in. cards equipped with triple aprons on 7¼-in. centers, and one section is 60x60-in. cards with double aprons on 10-in. centers. On these four sections, 15 or more colors are in process at all times; so the absence of the apron-soiling problem is a big advantage. The leather aprons absorbed oil and bled out.

The Thompsonville plant uses no emulsion on its stock, and it had a problem of getting enough rub with leather aprons. The leather aprons would dry out; if they were oiled, oily ends became a problem.

The original purpose of developing a rubber apron was to eliminate the use of oils on the leather aprons; but to everyone's surprise, the test aprons provided more density in the roving. Since the composition aprons provide more rub, the condenser speed was increased to get more production; a larger pulley was put on, and the pinion was changed on the tap drive.

As a result of the increase in roving density, jack-spool capacity increased about 20%, and the spinning spools are changed less often than before. The Thompsonville plant makes a 1- to 1½-run carpet yarn and uses a total draft of 30%.

Bigelow-Sanford has found that the aprons work satisfactorily with all-wool stock, wool-and-rayon blends, and 100% rayon stock. Static has been no problem; the Thompsonville cards are equipped with ion-neutralizer static eliminators.

Experiments Started in 1936

Bigelow-Sanford started experimenting with rubber aprons in 1936. Later Boston Woven Hose & Rubber Co. was called in to help with the development work. Over the next five years, 1,100 experimental aprons of 17 different types were constructed and tested. The apron that finally worked out has a canvas back with a surface made of a mixture of butadiene-acrylonitrile copolymer, which resists animal oils, and polymerized chloroprene, which is softened by animal oils. The mixture gives a proper balance between coefficient of friction and durability.

Along the inside edges of the

CONTINUED ON PAGE 184

Textile Ideas

From the Industrial Packaging and Materials Handling Exposition*

▶ Here are the seven top items of textile interest at this show, which accented packaging. Most of the materials-handling equipment had been shown before and reported in TW.

▶ Although there is nothing revolutionary in these items, they represent fringe areas where potential operating savings are large—packaging, sealing, identifying. How many of these ideas can you apply, to your benefit?

Can You Use a High-Speed Counter?

Any object that can break a beam of light can be counted by a high-speed machine shown by Post Machinery Co., Beverly, Mass. It doesn't make any difference how fast the items are fed as long as there is a brief space between.

The textile industry may not be able to use such a device until automation is futher developed, but keep it in mind. The unit can count up to 2,000 units per second and can be preset to count dozens, units per hour, etc.

*This event, the eighth annual one, was sponsored by the Society of Industrial Packaging and Materials Handling Engineers and held at Mechanics Building in Boston late last year.

Neat Little Box Printer Rolls on the Impression

A roller printer that is aimed at the replacement of stencils, labels, stamp pads, and other similar marking devices was shown by Algene Marking Equipment Co., 324 W. 26th St., New York 1, N. Y.

The device weighs only 8 oz., and the housing is made of unbreakable plastic. A simple horizontal movement of the marker causes the self-inking curved die to roll the impression onto the package or product. The die automatically returns to its position after each impression.

CONTINUED ON PAGE 244

See-Through Textile Packages Get Heat-Seal Closure

A new sealing machine for cellophane or polyethylene bags was presented by Pack-Rite Machines, 407 E. Michigan St., Milwaukee 1, Wis.

The Model DF, which TW's Jim Kennedy is shown inspecting above, can seal 90 4-in. bags a minute at a fixed speed of 400 lineal inches per minute.

Other fixed speeds are available from 300 to 860 lineal inches per minute in increments of 30. Variable speeds are also available in 11 ranges up to 1,065 ins. per minute.

The sealing impression can be vertical, checked, flat, or grooved in ½-, ¾-, and 1-in. widths.

With the increasing importance of mill packaging, this type of machine can be used for see-through packaging of socks, knitted underwear and outerwear, handkerchiefs, and the like.

Unit Prints and Dispenses Pressure-Sensitive Tape

A new tape dispenser that automatically prints and dispenses pressure-sensitive tape was shown by Derby Sealers, Inc., Derby, Conn. This Model 90 Coder prints any identification up to ¾ in. wide and 2 ins. long on up to 4-in. pieces of 1-in. tape. The machine, which takes a 5½-in. roll of tape, costs about $15 for the dispenser alone, $42 more for the printer.

Potential textile uses: combine tape and identification (operator, style, shift, etc.) on warps, rolls of fabric, etc. Only up to 4-in. lengths, however, can be dispensed on this model.

Other Derby dispensers for pressure-sensitive tape deliver up to 20-in. lengths in widths from 1 in. to 8½ ins.

Gummed-Tape Dispenser Has Push-Button Control

An electric dispenser for gummed tape that can deliver a predetermined length in 1 sec. was shown by Better Packages, Inc., Shelton, Conn.

The unit is said to cut the labor of application in half and the labor of dispensing to one-fifth.

The dispenser can be equipped with push buttons to dispense from 1 to 15 different lengths. All types of gummed tape can be handled, in widths up to 3 ins.

The control panels can be mounted at the machine, as shown in the picture, or further away if required for better operator efficiency.

Textile applications seem to be confined largely to the shipping room for carton sealing.

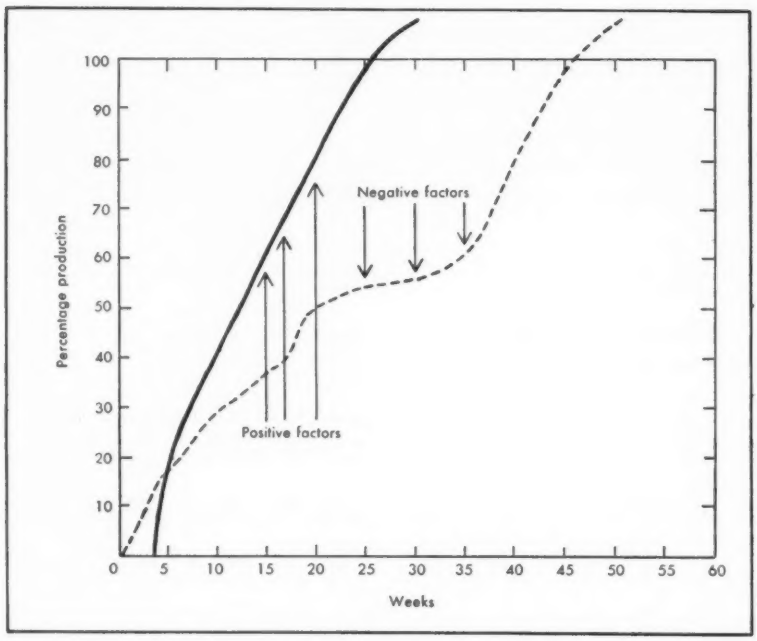
Box Is for a Wide Range Of Temperature and Humidity

The Climate-Lab, a humidity-temperature test box with program control was exhibited by American Instrument Co., Inc., Silver Spring, Md. The test chamber measures about 9.6 cu. ft. and can deliver conditions from 8% r.h. at 160° F. to 99% r.h. at 103° F. or 82% r.h. at 40° F.

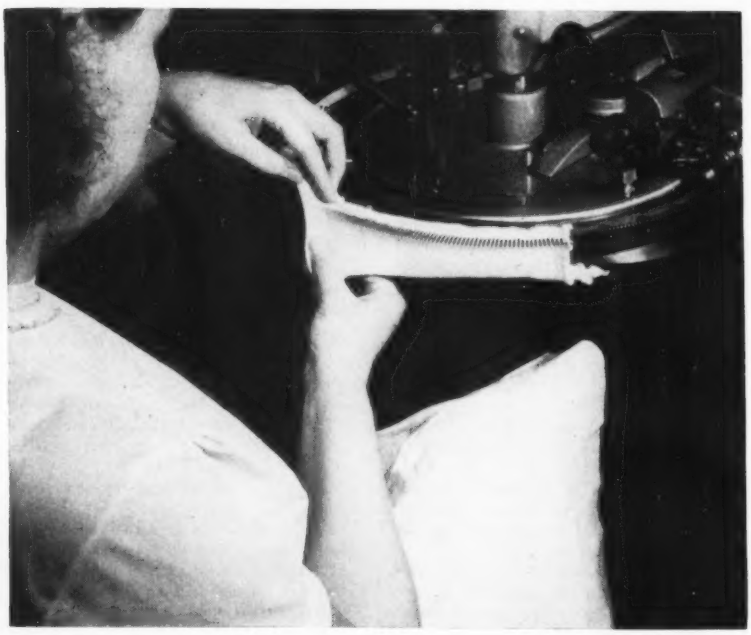
Four types of control are available: constant humidity with constant dry-bulb temperature, constant humidity with varying dry-bulb temperature, varying humidity with constant dry-bulb temperature, and varying humidity with varying dry-bulb temperature.

Possible textile uses: testing yarn and fabrics for effect of heat and moisture, effect of fungus growths, etc.; testing packaging for resistance to the elements.

This New Method Cuts



NEGATIVE FACTORS in the looper-training curve are removed and the positive factors are improved to eliminate the well-known plateau stage.



RUNNING STRAIGHT FABRIC on the points of a coarse-gauge looping machine is one of the exercises introduced to improve dexterity and other abilities.

▶ A new training method introduces special exercises and equipment to develop hand and eye coordination and other abilities

▶ No production is obtained during the early stages of training, but the trainee reaches 100% production in one-third the time taken by conventional training methods.

By GEOFFREY H. LADHAMS
Personnel Consultant, London, England

A LOOPER-TRAINING TECHNIQUE has been introduced to allow a trainee to reach her full production much sooner than by conventional training methods. The usual plateau that occurs in the trainee-looper's production curve is eliminated in the new system.

Known as A.M. (Analytical Method), the new system was devised to overcome the obstacles that confront the skilled operator-to-be. The A.M. training method reduces the factors that retard learning during training and improves the positive factors.

The positive factors include the need to earn a living and the wish to master the job and to progress. Included in the negative factors are the task of trying to acquire several skills and abilities simultaneously, the difficulty of settling down in a group of highly skilled and usually older workers, and the problem of getting used to the production atmosphere.

Instructional Tour Is Part of Training

A physical examination, including an eye test, is given to all applicants for the position of looper. A small group (two to four) of selected trainees is interviewed by a personnel officer and is told of the importance of their new jobs. This interview is followed by an instructional tour of the mill from yarn receiving to finished-sock shipping.

Adapated from a paper presented at a meeting of the Southern Hosiery Manufacturers Association.

LOOPER-TRAINING Time

They are introduced to the knitting operation, shown how the looper rounds are made, and told of the care that is taken in boarding and inspecting to get a high-quality product.

A small room, next to the production department, is set aside for looper training; and here the group meets the instructor, who is chosen from the loopers for her teaching ability and her ability to get along with people. It is not necessary that the instructor be a highly productive looper.

Special exercises are given the trainees to increase finger skill, hand and eye coordination, and other abilities.

Dexterity Is Improved With Special Devices

An instrument for improving hand and eye coordination is made from a box with two irregularly shaped rods projecting from the front. The trainee is supplied with two metal rings fixed to insulated wires.

The object is for the girl to move the rings along the rods and back again without touching the rods with the rings. A red light on the instrument flashes when a ring contacts the rods; white lights appear when the rings touch the end of the rods.

A target is set and the trainee practices until no red flashes occur while the rings are passed to the end of the rod and back.

After several days of this type of training, the trainee is introduced to a coarse-gauge point ring. She is given a piece of fabric of an appropriate gauge to run onto the points.

The fabric is unroved after the learner has completed the task. She is shown the number of loops that she has missed and the courses she has overrun to indicate the learner's need for further practice.

The instructor then shows the learner how to run on a straight piece of fabric with a slack course and points out the difference between the needle loops, sinker loops, wales, and courses.

The trainee practices running on one course until the job is done to the satisfaction of the instructor. The fabric is pulled from the points after the

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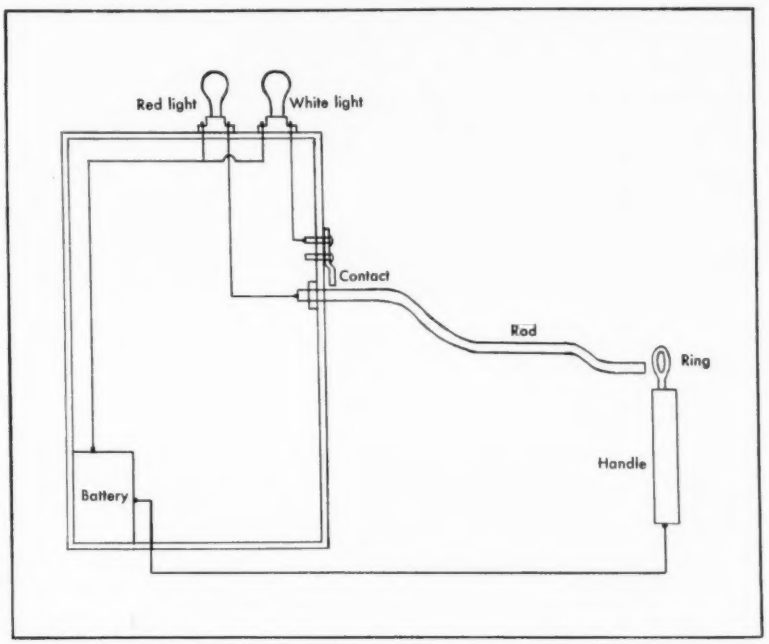
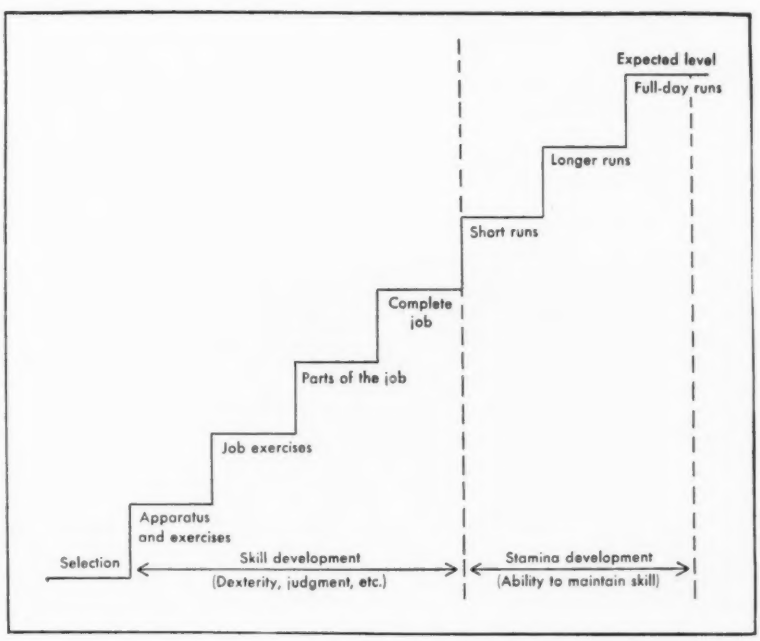


A TRAINING DEVICE that develops dexterity has two irregularly shaped rods. The object is to pass the rings over the rods without touching the rods.



STEPS in the A.M. system show how learning the job is done in stages. Selection is not always possible, but tests can be used.

BASIC MIX is made from four bales at quarter depths apart. With four blending feeders, 16 bales go into a mix. Ed Bankston goes around and around the bales to make up a mix. Cotton is blended by grade and Micronaire value.

How Elk Mills Makes 30s COTTON YARN

Elk Cotton Mills, Fayetteville, Tenn., has been making 30s carded yarn for over 50 years, but since 1935 nothing but 30s has been made at Elk. Ernest Rees, Jr., vice president and general manager, says that the specialization was brought about because it was believed that one number could be spun more cheaply than an assortment of numbers, since the machinery could be laid out for one number and the proper cotton could be purchased for this one number, with the result that a superior yarn could be made at a lower cost.

Now after almost 20 years of making one number, it's not surprising that Elk has a reputation for making high-quality 30s. With this experience in mind, the general procedures used at Elk are of out-of-the-ordinary interest. Here is how Elk makes 30s:

16 Bales Go Into a Mix

Elk buys 1⅛-in. Mississippi Delta cotton by grade (SM and MB), and the cotton is blended by grade and Micronaire. Each bale, when opened, is checked to see that it was not misgraded or mixed in the warehouse; and each bale is checked for cavitoma, grade, staple, and fineness. The mixes are laid out so that the Micronaire runs the same throughout the year.

Enough cotton is laid out for a week's run, and it is allowed to bloom about four days before being used. The basic mix is prepared from four bales; the bales are kept a quarter depth apart; full, three-fourths, one-half and one-fourth full at the end of the last bale. The mixing man goes around the piles to make the mix, and one gin roll is pulled from each bale. With four blending feeders, 16 bales are running at the same time.

Three pickers make 14-oz., 55-yd. laps. All three pickers are equipped with Saco-Lowell reserve box and evener, precision clutch, and pneumatic rack controls. The waste standard on the pickers totals 1.65%. Day-to-day variation in the picker lap is determined with a Saco-Lowell lap meter and is plotted to show how well opening and blending is being done.

Quality-Control Department Keeps Check On Quality

A quality-control department, which has been in operation for some time, statistically controls the variation and quality of each process; and periodic plots are made with a Uster tester and linear integrator in addition to the traditional measuring and weighing devices. Off-standard reports are issued, and any defects are corrected immediately.

The Uster tester with integrator is to check cards, drawing frames, and roving frames. Seven cards and one head per drawing frame are checked every day. From the roving frame, ten bobbins per frame are checked every day—five from the front line, five from the back line; frames are checked in sequence, bobbins at random.

LABORATORY EQUIPMENT includes a Micronaire and Uster tester with integrator. Each bale is checked with the Micronaire; the Uster is used on cards and drawing and roving frames. Glynn Spurlock is at the Micronaire, Lillian McCaleb at the Uster.

▶ Elk Cotton Mills has made only one number of yarn since 1935. For almost 20 years, mill routines have been refined to accommodate that one yarn.

▶ Each bale is tested for grade, staple, cavitoma, and fineness. Sixteen bales go into a mix. Elk makes a 14-oz. lap, 53-gr. sliver, and 2.40-hank roving. A Uster tester is used to check the carding, drawing, and roving processes.

By **THOMAS B. WINSTON**
Assistant Editor, TEXTILE WORLD

PICKERS make a 14-oz., 55-yd. lap. All three pickers are equipped with Saco-Lowell reserve box and evener, precision clutch, and pneumatic rack controls. Houston Sullivan (left) is overseer of carding; Lee Gray is picker man.

Standards for the Uster check:

Cards below	2.92
Drawing	3.00
Roving	7.00

The 30s yarn averages a break factor of about 2,700 with 16 breaks at random. All testing is done on the first shift. The testing laboratory is air conditioned by a Carrier system.

Neps are not as critical in weaving yarn as in knitting yarn; but Elk checks the nep count regularly, and off-standard cards are corrected.

If waste percentages get too high, the weekly averages for the shifts are posted. The card room reworkable waste got up to 2.5% on the first shift; but after the weekly figures were posted for a couple of months, the

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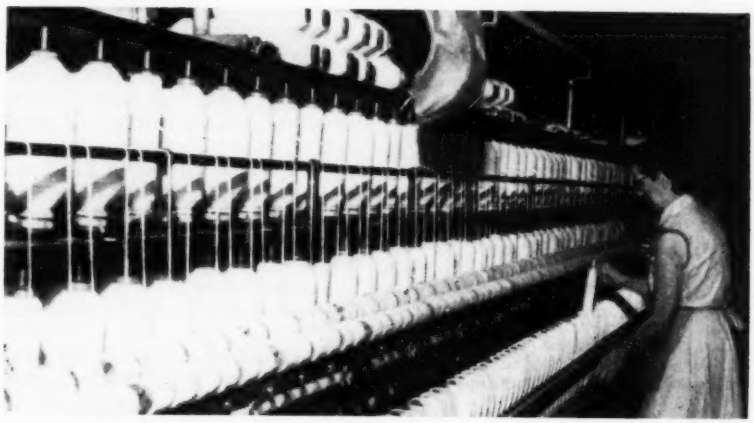
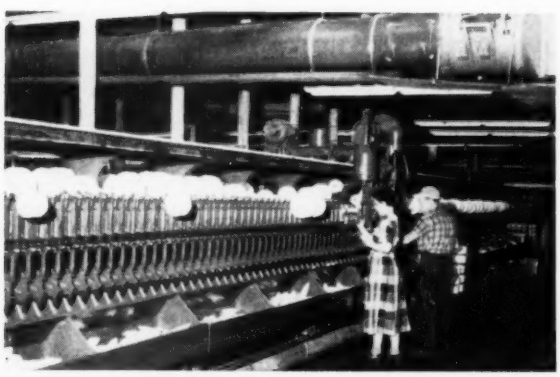
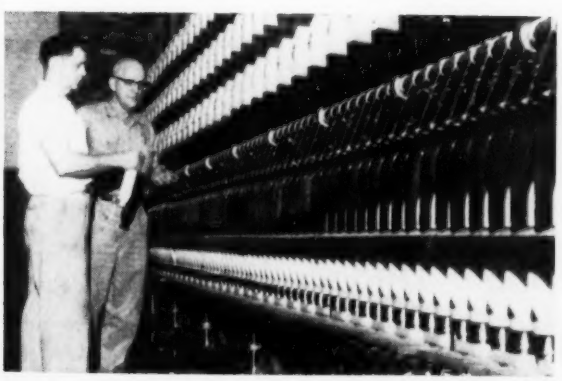


LONG-DRAFT SPINNING FRAMES are equipped with Pneumafil and revolving top clearers. Spindle speed is 10,250 rpm., with 2-in. rings, a 9-in. traverse, and 4.30 T.M. Ten-inch paper tubes are used. Fanny Mae Perry is the spinner.





WINDING EQUIPMENT includes a Barber-Colman spooler for single-ply yarn and Roto-Coners for two-ply. The Bahnson evaporating system keeps humidity at 65% in the twister room and 55% in the card and spinning rooms. Mira Mitchell and Ewin Reese are at the spooler; Jim Cannon and John Reavis (overseer) are at the Roto-Coner.

The New-Type ELECTRIC MOTORS

► NEMA standards for electric-motor frames used for the last 25 years have been replaced with new standards in the 1- to 30-hp. size. You will soon get more horsepower in a given space with the same performance standards of torque, temperature rise, and current limitations as in your present motors. The new standards result in motors with—

- **Smaller frame sizes**
- **Maintenance-free operation**
- **Increased reliability**

By W. H. FORMHALS, Westinghouse Electric Corp.

THE NEED FOR MORE REALISTIC standards in electric motors has resulted in a rerating program by NEMA to make motors better, more reliable, and more compact. Better materials, improved design and calculating methods, and better manufacturing have made the old frame-size-assignment standards obsolete.

There Were No Basic Changes in Motor Standards for 25 Years

In the past 25 years, there has been no change in motor-frame sizes for the most-popular, high-production ratings from 1 to 15 hp. other than a minor horsepower change in 1940 in the 1- to 2-hp. ratings. In this 25-year period, our technological advances have resulted in motors being built in much larger frames than is necessary or practical.

The first step in giving you a better motor was taken by the Generator Section of NEMA on Nov. 12, 1952, when it approved a suggested standard design for alternating-current, open-type motor ratings in 1 to 30 hp. Motors built by these standards will have more horsepower in a given size. The new standards in covered polyphase, squirrel-cage, 60-cycle, open, four-pole motors are the key for rating motors of other speeds, enclosures, etc.

These motor ratings are for standard motors. But the textile industry has many unique applications and problems that do not allow standard motors to be used generally. However, when the basic designs of the standard motors are changed, special items such as lint-free motors and loom motors will probably be affected.

These New Materials Make Smaller Motors Possible

Better insulation is probably the first and most important new material used in motors. When the motor standards were established in 1929, cotton-covered wire and paper-and-cotton slot-and-phase insulation were being used. The impregnating varnishes used on the insulating material were made of natural resins, oils, and solvents.

With these materials, a considerable mass of insulation was required to get a suitable dielectric strength. Such insulation took up a lot of space and, in addition, absorbed moisture and was seriously affected by water, oil, etc.

Today, our wire insulation is of controlled synthetic materials. These materials have been selected gradually over the years and have replaced the cotton-and-paper insulating material. The synthenic-resin covering is thinner and better than the old double cotton covering; and the synthetic materials in slots, between phases, in connections, and in lead protection are better and more compact.

Based on a talk presented at a recent Raleigh, N. C., meeting of the Textile Subcommittee, American Institute of Electrical Engineers.

Comparison of NEMA Standards For Motor-Frame Sizes of 1,800 Rpm.

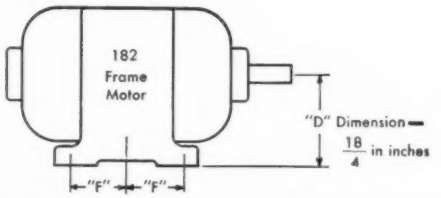
(Polyphase, squirrel-cage, general-purpose Design A and B horizontal open-type, 40° C., 60 cycle, 550 v. or less)

Hp.	Frame sizes New (1952-53)	Old (After 1940 revision)	Old (1929-30)
1	182	203	204
1 1/2	184	204	224
2	184	224	225
3	213	225	
5	215	254	
7 1/2	254U	284	
10	256U	324	No change since 1929
15	284U	326	
20	286U	364	
25	324U	364	
30	326U	365	

NEW NEMA STANDARDS call for placing the most commonly used open motors from 1 to 30 hp. in only five frame diameters. Six frame diameters were used for the old NEMA standards. Also, the 1-, 1½-, and 2-hp.-size frame is a smaller size than that used on motors built at present.

Frame Numbering System

The first two digits of the frame number = 4 x "D" dimension (Example: A shaft height of 4½ ins. multiplied by 4 = 18, designating a 180 dia. motor)



The third digit of the frame number is obtained from "F" dimension

(Example: If the "F" dimension is 2½ ins., the preferred chart gives the third digit as "2." In this case, a 182 frame motor is designated)

THE PATTERN OR SYSTEM of numbering frames is: (1) the first two digits of the frame number ("D") are equal to four times the dimension from the motor base to the shaft center, (2) the third digit ("F") is the distance from the frame center line to the center of the bolt holes in the feet.

Are Smaller and Better

Synthetic varnishes more thoroughly impregnate, bind, and protect the windings. A lesser mass of denser insulation does a better job of protection.

Because these new materials are superior to the older materials, they will stand up better at the same operating temperature rises than the old materials. In short, the motor should have a longer insulation life.

New Knowledge of Heat Transfer Results In a Better Motor

A second big factor permitting a smaller and better motor is the better knowledge of heat transfer acquired by the design engineer. It is now evident that a smaller mass of more dense insulation does a better job than the older types of insulation. This improvement aids in two ways:

1. Decreased insulation-space requirement permits more copper to be put into a stator slot of the same size as on the older motor—or for a given amount of copper, a smaller slot is required. Essentially, either of these two options results in a better use of the magnetic circuit.

2. The coil insulation is the first step in heat transfer. The dense insulation is as good a dielectric as the older, thicker materials. Besides, it provided better heat transfer than the old materials that depended to some degree on trapped air.

Great strides have been made in the actual transfer of heat in the motor windings to the outside atmosphere. Recent knowledge acquired by design engineers has resulted in minimizing the difference in temperature. It is also possible to make better use of all heat-dissipating means.

The thinner insulation not only keeps a modern motor at a lower hottest-spot temperature, but enclosed motors have a better transfer of heat to the outside air because of the better contact between the laminations and the frame. In addition, studies of blowers and other means for directing air over the windings has given a better-cooled open machine.

Other New Developments Help Make a Maintenance-Free Motor

New developments in silicon steel for laminations, processing of laminations, and improved methods for obtaining interlaminar resistance that result in lower iron losses for a given flux density gives a more effective use of iron. These developments permit either lower iron loss or the ability to carry higher flux density in the iron and are greatly responsible for the reduction of motor size.

Add to these developments the knowledge obtained by motor manufacturers in how to die-cast rotors with ventilating fans as an integral part, and you have an even and rapid transfer of rotor heat to the cooling medium.

Motor manufacturers have incorporated some of these materials and processes in their present motors. However, the materials were put in motors with proportions primarily based on the old frame standards, and effective use has not been made of the materials.

The rerate program gives motor manufacturers a chance to build a more-reliable, maintenance-free motor of balanced design, incorporating these new materials and new processing techniques. The new materials and designs also permit the motor manufacturers to put more horsepower in a given space with the same performance standards of torque, temperature rise, and current limitations.

The New Standards Include Two New Small-Size Motor Frames

The proposed new standards, as is the case with all NEMA standards, is entirely voluntary. Any motor manufacturer is free to use or not use them. The new standards will parallel the old original standards until the motor-manufacturing industry can complete a transition to the new horsepower-frame-diameter relationship to its own and its customers' satisfaction.

First, to make an integral-horse-

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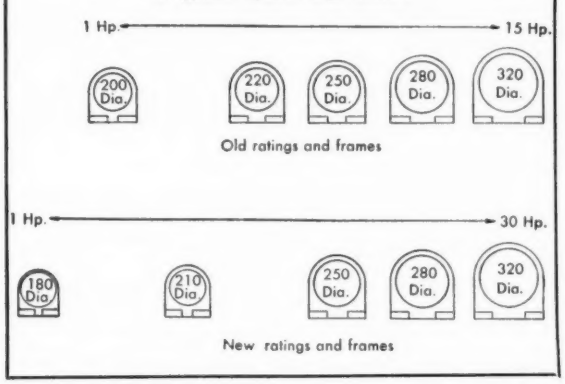
Comparison of Frame and Horsepower Ranges
(Polyphase squirrel-cage motors)



DOUBLE THE HORSEPOWER of the old frame can be packed into the new frame of the same size in the 30-hp. open-motor rating. A new 180-dia. motor is included in the new standards, and a 210-dia. motor replaces the two motors (200 and 220 dia.) formerly used to house 3- and 5-hp. ratings.

Comparison of NEMA Standards For Motor Frames of 1,800 Rpm.
(Polyphase, squirrel-cage, general-purpose motors: open-type 40° C. and totally enclosed fan-cooled type 55° C.)

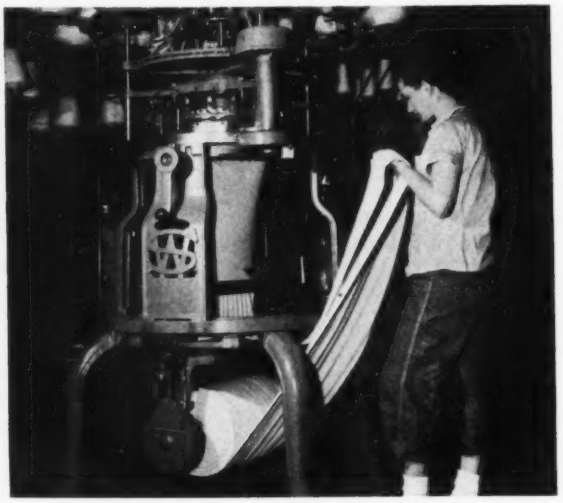
Hp.	Frame sizes			
	New		Old	
1	182		203	
1 1/2	184		204	
2	184		224	
3	213		225	
5	215		254	
7 1/2	254U		284	
10	256U		324	
15	284U		326	
20	286U		364	
	Open	Tefc	Open	Tefc
25	324U	326U	364	365
30	326U		365	404

Open and Tefc* (New)
Open and Tefc* (Old)

*Tefc = totally enclosed fan-cooled

THE SAME HORSEPOWER FRAME is used for open and totally enclosed fan-cooled motors up through 20-hp. ratings. Larger frames have to be used for the totally enclosed fan-cooled motors above the 20-hp. rating to maintain the same standard of temperature rise, torques, etc.

YARN-TWIST CHECK is made by Foreman C. M. Hinshaw by holding the yarn two feet from the cone and letting it double back on itself.



TWELVE YARDS OF CLOTH are inspected on each machine four times during each shift. The inspector records all faults she finds.

Triple-Inspection Program Guarantees QUALITY KNITWEAR

These methods insure top-quality underwear and outerwear fabrics at Roanoke Mills—

- **Yarn tested for size**
- **Knitting-machine adjustments made on light and heavy yarns**
- **Fabric constantly inspected by knitter**
- **Fabrics on all machines spot-inspected**
- **One roll from each machine checked over inspection light daily**
- **Handling faults reduced by roll-length uniformity**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

A TRIPLE-INSPECTION PROGRAM in the knitting department at Roanoke Mills, Roanoke, Va., insures top-quality underwear and outerwear. Special inspectors check cloth quality during each shift; and knitters, relieved of oiling and cleaning, pay more attention to inspection. The cloth is also inspected over a frame in the knitting room.

Roanoke Mills believes that the first step in producing quality knitwear is to select the best knitting yarn. Cotton yarn is obtained from several spinners, and each shipment of yarn is checked for correct yarn numbers.

Knitting Machines Are Adjusted to Yarn Weight

Yarn from four cones taken from different cases are reeled off and weighed. If the average yarn number is one number too high or too low in the immediate range of 24s cotton, the results of the tests are reported to the knitting-room foreman. A report is made to the spinner, and the knitting machines are adjusted to obtain the correct weight of cloth while the light or heavy yarn is knitted.

To prevent mildew and to assist conditioning, yarn cases are stored 4 ins. off the floor on 2x4-in. rails. Relative humidity in storage is controlled at 50%, and the temperature is set at 78° F. Yarns are usually stored at least four days in these conditions before they are passed to the knitting room.

A batch of undyed yarn from one spinner is run completely out before a new batch is introduced. Dyed-yarn shipments are given a batch number,

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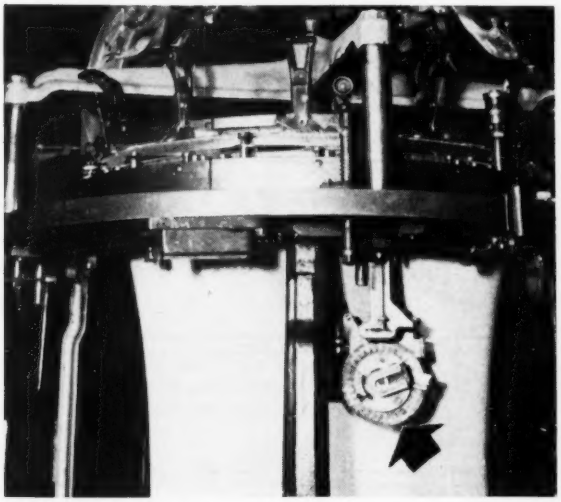
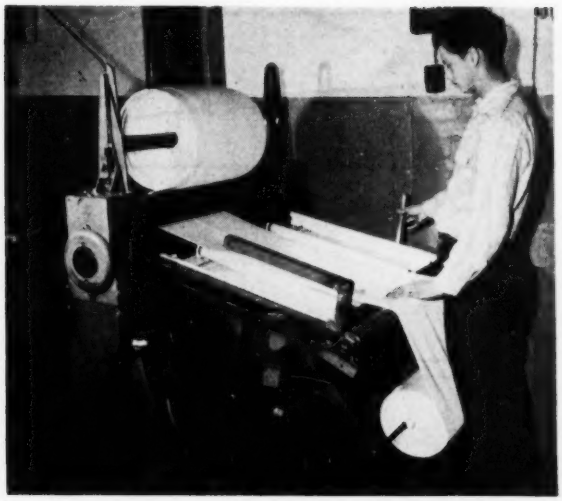


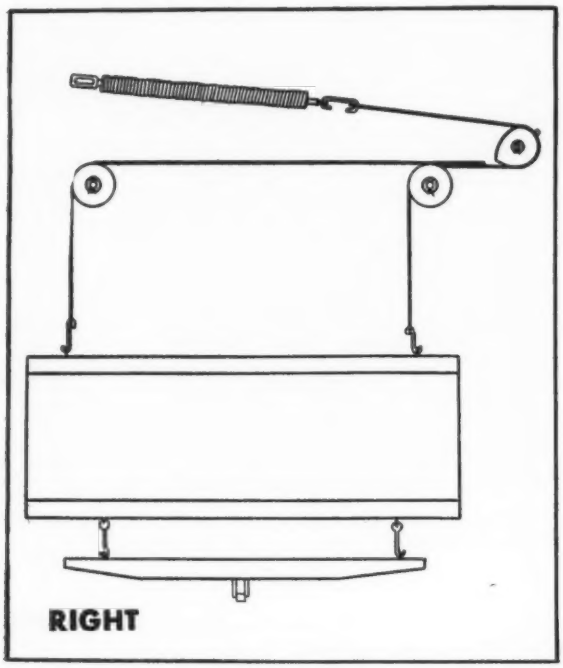
YARDAGE COUNTER below the head ring stops the machine. Relieved of oiling and cleaning, knitters concentrate on inspection.



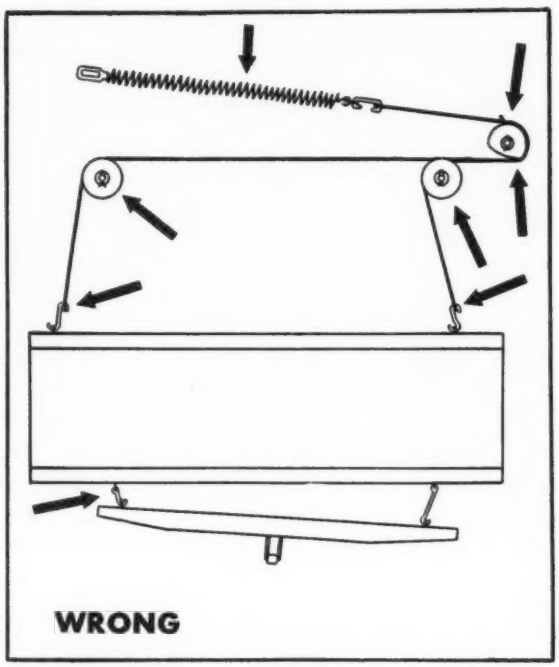
THIRD INSPECTION OF FABRIC is done on a mill-made frame over an inspection light. One roll is checked from each machine daily.

Knitter B.E.K.					Inspector J.C.					Date 12/12/53										
Fabric	98	98	98	98	98	98	98	98	98	98	98	98	98	84						
Head size	16	16	16	16	16	18	16	16	16	18	16	16	18	24						
Machine No.	56	62	47	55	63	48	57	61	58	49	66	65	50	151						
Holes 1								1												
2																				
3																				
4								2												
Drop stitches 1																				
2														3						
3																				
4																				
Run downs and splits 1																				
2														6yds						
3																				
Bad needle holes 1																				
2				1																
3														1						
Bird eyes 1																				
2				4yds.																
Press-offs								1												
Grease spots																				

INSPECTORS' FORM lists the machines attended by one knitter. Individual fault records show at a glance any machines that are not performing well.



HARNESS-MOTION TROUBLES are over when you set the Dwight top this way. The tension is correct on the spring, the compensating sheave is centered correctly, and the harness sheaves and jack stick hold all harness straps parallel to the loom frame.



ALL THE DEFECTS for setting Dwight spring tops are shown here. A loom wouldn't run with all these errors, but there is at least one of these incorrect settings commonly found on looms throughout a weave room.

Service HARNESS MOTIONS To Keep Your Looms Running

▶ You are asking for trouble if you are not constantly looking at your cam harness motions to keep them adjusted. Check over all your harness motions every six months to be sure that—

- **All sheaves are free and aligned correctly**
- **Spring tension is light, but firm**
- **All moving parts are square with the loom frame**

By WILMER C. WESTBROOK
Consulting Editor, TEXTILE WORLD

IF YOU WANT TO KEEP your looms on the tight pulley, you must keep your cam harness motion loose, compensating sheaves and harness sheaves loose and free on the shafts to avoid damage from binding, and springs loose to prevent strain.

Service All Four Types Of Cam Harness Motions

The four distinct types of cam harness motions must each be handled differently: but they all have one thing in common: each must be free and easy in its movement.

The roll-top harness motion is the simplest motion to maintain, but its service is limited to weaving two-harness material. Where more than two harnesses are used, there are three motions that are serviceable:

1. The clock-spring top is the newest type and has many advantages over the older types because the springs last longer, the harness action is smoother, harness-strap wear is less, and less oil is thrown on the warp and cloth.
2. The Brown spring top gives good service when it is properly adjusted and cared for.
3. The Dwight spring top gives more trouble than the first two types of harness motion, but it too can be serviceable if it is maintained periodically.

If your looms are equipped with clock-spring tops, you should have little trouble with your harness motions. However, if your present harness motions are one of the other two types, this maintenance program will enable you to minimize your trouble with them.

Overhaul Your Harness Motions At Least Every Six Months

Every six months tear the motion down completely, inspect the parts, and reassemble.

Check the sheaves and shaft for wear, and discard worn parts. Since most of the weight of the harnesses is on the top of the shaft, the top part will wear first. You can often turn the shaft over and run it for a while longer.

Double life can also be obtained from the shafts by making them reversible. In that case the worn end is turned around and placed in the shaft stand, and the unworn surface is used for the sheaves.

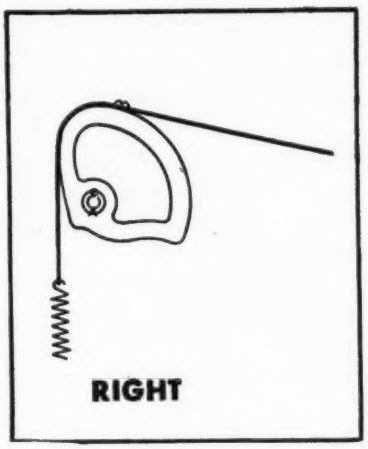
With proper care, you should never have to replace sheaves that have bushings. Just replace the bushings when they become worn. But you must catch them before the shaft wears into the sheave itself.

You have three choices of bushings:

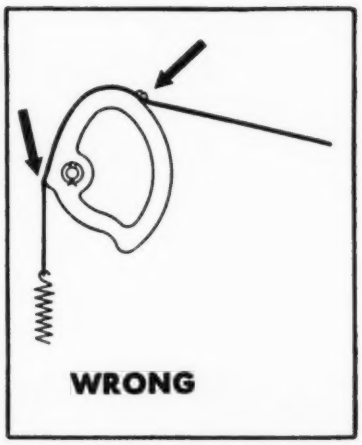
1. Bronze bushings
2. Self-lubricating wood bushings
3. Self-lubricating powdered-metal bushings

Soak bushings in oil before use, and wipe off excess oil to prevent stains on the cloth.

When sheaves without bushings or sheaves with plain bushings are used, lubricate the sheave shaft with a thin film of light grease or tallow. This lubricant will not last long and should be renewed at each warp change.

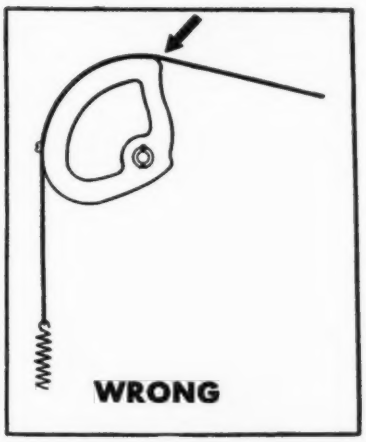


THIS SHEAVE SETTING is correct for harnesses in the Down position. As the harnesses are raised, the harness straps always rest on the round surface of the sheaves. With this setup, the spring tension doesn't strain the harness straps.



THE HARNESS STRAP won't last long on this Brown motion because it is not centered on the compensating sheave. With the sheave in this position, the screw and the sharp point of the sheave will cut the strap in two.

THE HARNESSES are raised here, and the compensating sheave has been pulled to an extreme setting position by the spring. The harness strap and screw in the sheave are positioned to make the strap last.



HARNESS-STRAP DAMAGE on the Brown top results when the harness is in the Up position if the strap is improperly centered. In this case, the strap rides the toe of the sheave as the harness moves downward.

Be Sure Spring Tension Is Light But Firm

When you reassemble harness sheaves, always use a spacer washer between the sheaves to prevent binding.

Use a patented steel washer having a cotter pin hole in it on the end of the shaft. A leather or fiber washer will also do the job; but don't use a cut metal washer because it will stick to the outside sheave, and the constant turning will soon wear out the cotter pin.

When the harness straps are replaced, adjust the harness springs so that the springs are almost compressed when the harnesses are up. Put just enough tension on the springs to lift the harnesses firmly and hold them stationary in the Up position.

Springs adjusted with too much tension cause excessive wear to all parts of the harness motion and the cam assembly. Too much tension on the springs also causes breakage of straps, screws, jack-stick hooks, and harness hooks.

Check the tension on the springs of clock-spring tops as closely as those of the Brown and Dwight motions, and adjust the tension by moving the inside ends of the springs to the correct slots.

Set the Harness-Motion Parts Parallel to the Loom Frame

Set all parts of all spring-top harness motions in vertical and horizontal planes. (Straight up-and-down lines parallel to the loom frame is the easy way.) This setting includes the springs, harness straps, harnesses, jack sticks, and treadles.

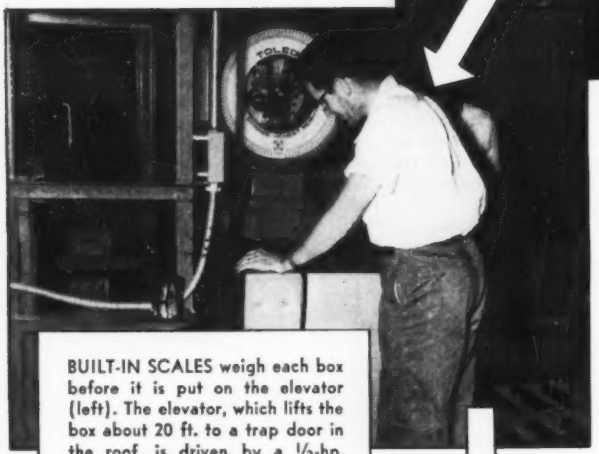
Any uneven pull or lift will cause unnecessary strain not only to the harness-motion parts but also to the warp yarn. Many cloth defects such as kinky filling, overshots, and uneven and reedy cloth are the direct result of improperly adjusted harness motions.

Move the front loom-arch ends forward or backward to position the harness sheaves so that their movement is vertical and so that there is sufficient clearance between the front harness and the handrail when the lay is at its back-center position.

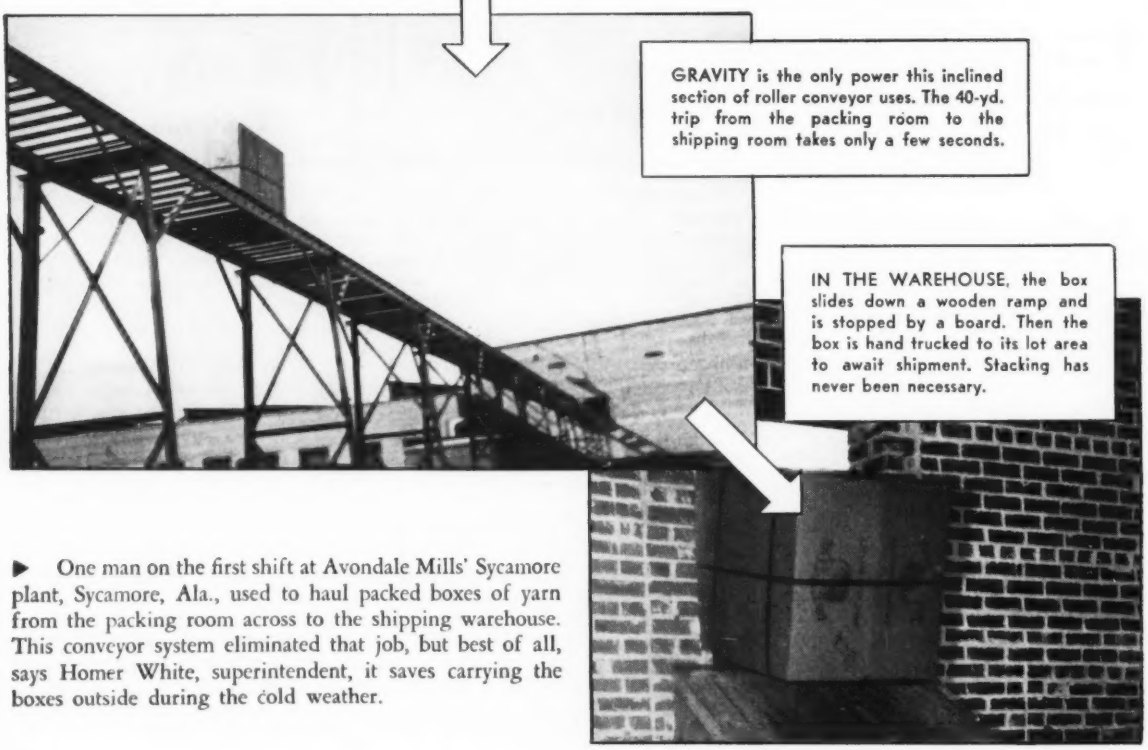
If neglected, your spring-top harness motions will be a constant worry and expense. With systematic preventive maintenance, they will give efficient and trouble-free service.

This Simple System of YARN HANDLING Saves Time, Bother, and Money

EVERY 2 MINS. a box of yarn is packed. All packing is done on the first shift, and 50,000 lbs. of yarn is packed in the 8 hrs. Each box is packed right on the conveyor.



BUILT-IN SCALES weigh each box before it is put on the elevator (left). The elevator, which lifts the box about 20 ft. to a trap door in the roof, is driven by a ½-hp. motor.



GRAVITY is the only power this inclined section of roller conveyor uses. The 40-yd. trip from the packing room to the shipping room takes only a few seconds.

IN THE WAREHOUSE, the box slides down a wooden ramp and is stopped by a board. Then the box is hand trucked to its lot area to await shipment. Stacking has never been necessary.

▶ One man on the first shift at Avondale Mills' Sycamore plant, Sycamore, Ala., used to haul packed boxes of yarn from the packing room across to the shipping warehouse. This conveyor system eliminated that job, but best of all, says Homer White, superintendent, it saves carrying the boxes outside during the cold weather.

How Much TESTING Should You Do?

► You don't need to be a statistician to figure out how much testing to do. You can use simple formulas from the ASTM manual on quality control. The amount of testing depends on the amount of variation in the process. Here, for example, is how to find—

- **How much yardage per bobbin***
- **How many bobbins per frame**

By CLYDE MOSS, Assistant Superintendent, Firestone Textiles

HOW MUCH TESTING should you do in your mill? Your answer to this question will determine your outlay for testing equipment and personnel to do the job.

I recently heard a mill man say, "We sure have lots of test data if we ever need it."

Testing merely to accumulate data for an emergency is a dead waste of time and equipment. Unless you have a clear objective, it is worse than useless to do *any* testing; old data represent tests on material that has been used, cannot be duplicated, or was taken from a process that has since been altered in some way.

Let us look at a common test normally conducted on roving.

The normal practice is to pick up at random a number of bobbins or packages of roving from a certain frame, frames, or location. These packages are taken to the laboratory, and a certain length is measured from them. After conditioning, the samples are weighed and the average hank roving is computed.

Testing Is Based on Variation

The question is: What is the minimum amount of testing to assure acceptable control?

The theory behind the amount of testing necessary is simply this: What is the variation present in the process? How do the individual weighings group about the average?

Suppose, out of eight weighings, you have *no* variation. For instance, in eight weighings from representative roving, you find all of them are exactly 2.00 hank. If several tests come out the same way, you can establish one bobbin as the correct sample size. This means that any bobbin you pick up will be a reliable sample of the total production of that particular size of roving. Naturally, this never will be the case. As the variation increases in the samples you pick up, you must assume one of two things: (1) in order to get a true sizing, you must pick up additional bobbins, or (2) you cannot put as much reliance in the test.

You must assume that your variation between frames is no greater than the variation from spindle to spindle on any one frame. If you find that you have more variation between frames than within a frame, you have machines running with the wrong settings. If the machines are running the same, you could pile the figures of the one-frame sample together, and the pile would be a reasonable facsimile in miniature of a pile made from tests on all the production.

What you have to decide is how many bobbins per frame and how much roving from each bobbin are necessary to give you the necessary control.

How To Get Length of Sample

First, you want to know the minimum length of sample. Most of us use 12 yds. or a multiple of 12 yds. in reeling for roving size. Why? Because our predecessors did this and also because the tables are conveniently figured on this basis. However, the length depends on how much variation exists in successive reelings from the same bobbins of roving.

Common sense will eliminate very short lengths. Reeling 1 yd. from a bobbin will distort and stretch the roving and add bias to the test. Six or 12 yds. can be reeled as easily as 1 yd.

Here is how we found out the proper length to test.

We selected one bobbin of roving from 10 different frames and reeled the following samples from each bobbin: four successive lengths of 6 yds., 12 yds., 24 yds., and 48 yds. We numbered the bobbins 1 to 10. The actual weights of the 6-yd. reelings are shown in Fig 1, which is on the next page.

The object here is to select the test that has the sensitiveness to properly evaluate the total production of the roving frame. How sensitive should the test be? The sensitivity depends on how much effect a one-tooth change in the draft gear will have.

In controlling our roving, we change a gear only when a one-tooth change in the draft gear will correct for any deviation from the number. In other words, we expect the one tooth to change the draft by the ratio of one tooth to the total teeth in the gear. For example, with a 33-tooth draft gear, a one-tooth change will be 1/33 or 3%. We expect the one-tooth change to influence the size 3% in whichever direction we change.

So with 33-tooth draft gears, our test must have a sensitivity or tolerance of ± 3%. This plus-or-minus percentage is the maximum amount that the average roving weight can vary without interfering with the process.

Our task was to check the variation in the averages of the lengths we reeled to see if they were within the ± 3% limit. The 48-yd. sample contained the least movement and the 6-yd. sample the most; however, by applying simple statistics to the figures, we determined that the 6-yd. sample was sensitive enough to control the process.

The formula for checking the

*Roving bobbins are used only to illustrate principles in this article. The same ideas can be applied to any measuring or control problem you have.

movement of the average is found in the ASTM manual on quality control, page 63. This formula is stated in terms of control lines, which determine the upper and lower limits of process control. In our case, if the control lines on the 6-yd. sample fall inside ± 3%, the sample is adequate for our purposes.

The control lines = $X \pm A_2 R$.

X is the grand average of the test averages.

A_2 is a constant and can be found in the ASTM manual, page 63.

R is the range, which is simply the difference between the highest and lowest values in the tests.

As shown in Fig. 1, a 6-yd. reeling provides a tolerance of 2.34%, which is, of course, lower than the required 3%.

How To Determine the Number of Bobbins per Frame

How many bobbins of roving do you now size in order to ascertain your "average hank roving"? Why do you use this figure? Usually the answer to this question is: "We have always used this number" or "We test eight bobbins because our yarn reel has four spindles and it is convenient to use a multiple of four." This is the sizing practice of perhaps 95% of all textile plants. Usually the sample size has its origin in the forgotten past.

Here is how we determine how many bobbins we should use to represent a frame. The number of bobbins needed is based on the variation between bobbins of roving.

We had been using four bobbins from each frame, and we wanted to see if we should keep on using this number. We reeled 6-yd. samples from four bobbins off each of eight frames. The weights of these samples are shown in Fig. 2. The formula for finding the number of tests needed is:

$$N = \frac{t^2 \times V^2}{E^2}$$

Where:

(1) t = probability factor

This factor is found from a table and is determined by how much chance we want to take that our samples will be representative. Since we shall be testing this process daily, we decided on a probability of 95%; in other words, we were willing to be wrong one time out of 20. The table of probability factors shows:

%	t	t^2
90	1.645	2.70
95	1.960	3.84
99	2.576	6.64

So our value for t^2 is 3.84.

(2) V = coefficient of variation

We have all the information necessary to calculate V except for a factor d_2, which is found from a table on page 63 in the ASTM manual. This factor is based on the number of observations in each test. For four observations, $d_2 = 2.059$. With this figure, we can get the standard deviation and then the coefficient of variation. The standard deviation is found by the formula:

$$S.D. = \frac{\overline{R}}{d_2}$$

$$S.D. = \frac{.046 \text{ (from Fig. 2)}}{2.059 \text{ (from table)}}$$

$$S.D. = .0226$$

Now we get V.

CONTINUED ON PAGE 209

Fig. 1 -- Hank Roving of 6-Yd. Reelings From 10 Bobbins

Bobbin		Bobbin		Bobbin		Bobbin		Bobbin	
1	1.597	2	1.577	3	1.538	4	1.619	5	1.592
	1.608		1.588		1.592		1.678		1.613
	1.623		1.562		1.511		1.623		1.619
	1.558		1.583		1.597		1.613		1.572
Average ($\overline{X}$)	= 1.596	($\overline{X}$)	= 1.570	($\overline{X}$)	= 1.559	($\overline{X}$)	= 1.633	($\overline{X}$)	= 1.599
Range (R)	= .065	(R)	= .025	(R)	= .086	(R)	= .065	(R)	= .045
6	1.548	7	1.592	8	1.572	9	1.548	10	1.583
	1.572		1.603		1.603		1.534		1.515
	1.592		1.567		1.572		1.558		1.597
	1.583		1.577		1.587		1.529		1.577
($\overline{X}$)	= 1.574	($\overline{X}$)	= 1.585	($\overline{X}$)	= 1.583	($\overline{X}$)	= 1.542	($\overline{X}$)	= 1.568
(R)	= .044	(R)	= .036	(R)	= .031	(R)	= .028	(R)	= .082

Grand average $(\overline{\overline{X}}) = 1.581$

Average range $(\overline{R}) = 0.051$

Control lines $= \overline{\overline{X}} \pm A_2\overline{R}$

From table (ASTM manual) $A_2 = 0.72$

$A_2\overline{R} = \pm 0.037$

Percent tolerance $\frac{0.037}{1.581} = 2.34\%$

Tolerance needed $= 3.00\%$

Fig. 2 -- Hank Roving of One 6-Yd. Reeling From Each of Four Bobbins on Eight Frames

Frame		Frame		Frame		Frame		Frame		Frame		Frame		Frame	
1	1.623	2	1.565	3	1.603	4	1.590	5	1.621	6	1.621	7	1.590	8	1.572
	1.645		1.603		1.577		1.600		1.595		1.610		1.616		1.590
	1.563		1.590		1.605		1.577		1.616		1.600		1.597		1.623
	1.570		1.580		1.616		1.613		1.565		1.597		1.577		1.577
Average ($\overline{X}$)	= 1.600	($\overline{X}$)	= 1.585	($\overline{X}$)	= 1.600	($\overline{X}$)	= 1.595	($\overline{X}$)	= 1.599	($\overline{X}$)	= 1.607	($\overline{X}$)	= 1.595	($\overline{X}$)	= 1.591
Range (R)	= .083	(R)	= .038	(R)	= .039	(R)	= .036	(R)	= .056	(R)	= .024	(R)	= .039	(R)	= .051

Grand average $(\overline{\overline{X}}) = 1.597$

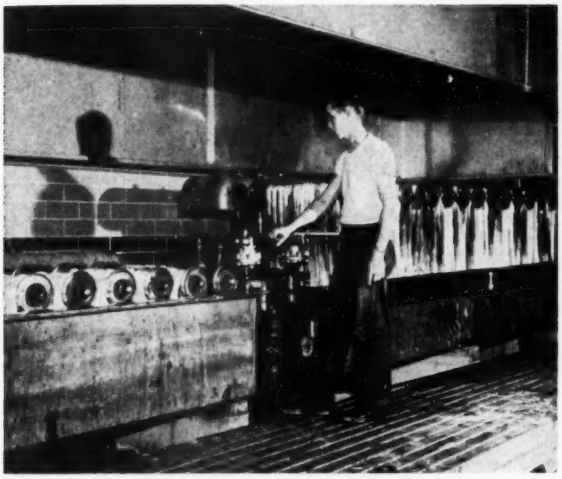
Average range $(\overline{R}) = 0.046$

Number of observations $= \frac{t^2 X V^2}{E^2}$

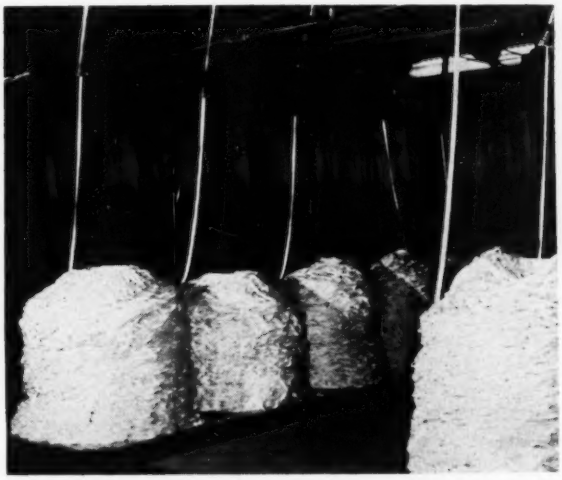
Where: t = probability factor
V = coefficient of variation
E = tolerance needed
See text for explanations

CONSUMER PACKAGES take many forms: hanks, balls, spools, and cones of all sizes and shapes.

SKEIN REELS wind yarn for dyeing on Smith-Drum Cascade machines, on Buhlman dip-action machines, or on Hussongs.



VARIEGATED-SHADE DYEING is done by dipping skeins into different dyebaths. The Buhlman machine dips pneumatically and can be made to rotate the skeins.



WARP-BALLING STAGE is mounted on railroad tracks. When a 48-warp batch is ready to doff, the stage moves, the next set continues to run, and the doffer works uninterruptedly.

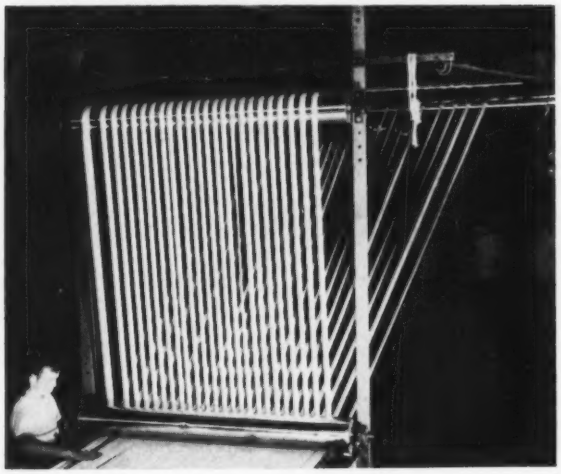
New Thread Plant Uses Versatile DYEING EQUIPMENT

▶ Handling a large volume of many different types of yarn in widely varying batch sizes requires an unusually adaptable dyehouse

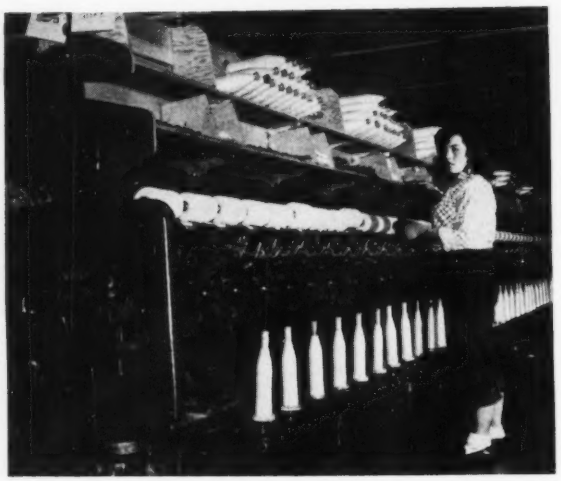
By GEORGE M. MOISSON

▶ Here's how American Thread Co., Sevier, N. C., handles that problem

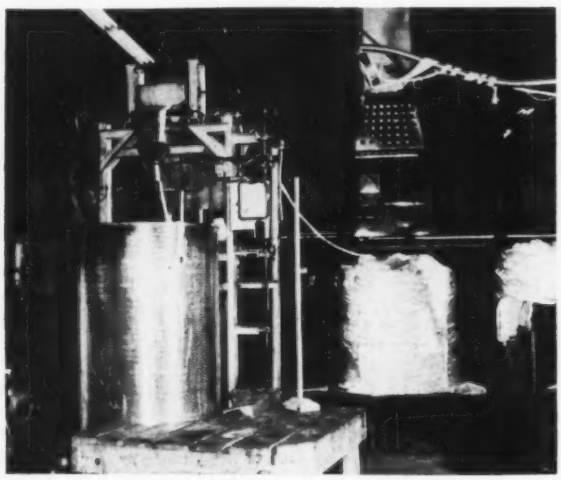
American Thread Plant *(continued)*



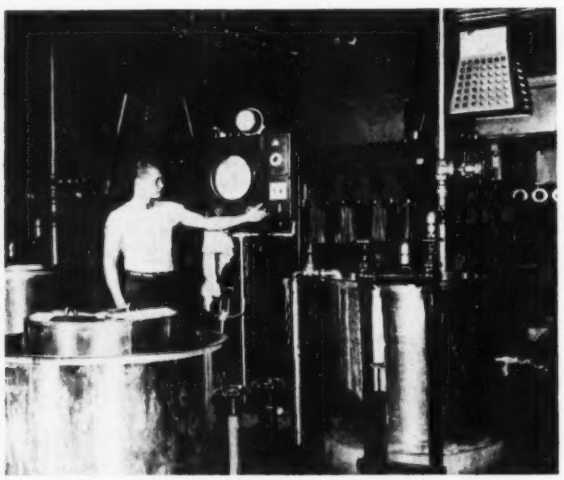
WARP MERCERIZER [TW, Sept. '53, p. 150] handles 48 warps at a time. Not all the yarn at Sevier is mercerized.



PACKAGE WINDER winds yarn on 1⅝-in. springs or Dytex tubes for package-dyeing machines.



WARP LOADER plaits the warp into a basket for dyeing. Then the basket is lowered into the dye kettle and covered. A similar device unloads the basket after dyeing is completed.



WARP-DYEING MACHINES hold 200- to 400-lb. loads. Small loads require a spacer to allow plaiting of a thinner "wall" of yarn in the basket.

THE MERCERIZING, bleaching, dyeing, and winding operations in the 11-acre American Thread Co. finishing plant at Sevier, N. C., were laid out for utmost functionality and mechanization.

A minimum of manual lifting and a maximum of controlled electrical and mechanical operations have been built in. Lift trucks, palletization, monorails, and Cargotainer storage have been used to give ease of handling and plenty of working space.

Dye Methods Vary

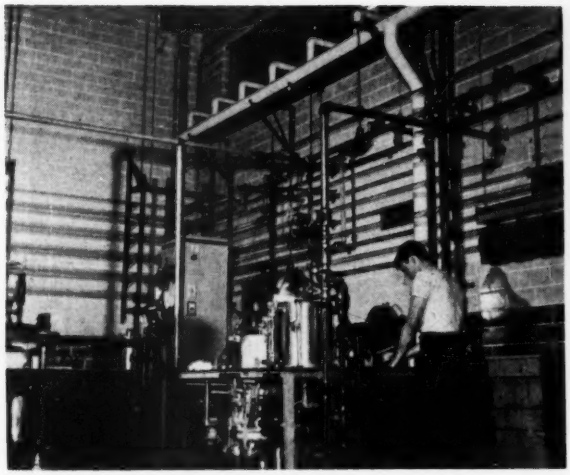
Dyeing of yarns is performed by three different methods, dependent on the nature of the yarn and the size of the operation. Rug yarn, for instance, is wound into the skeins and dyed in Hussong machines. The nature of the yarn and the types of dyes used permit this method. The Sevier plant has seven of these machines, each holding up to 400 lbs. of yarn. Vats, naphthols, and aftertreated dyes of sufficient fastness to meet the specifications are used on rug yarn.

Warps can be dyed directly after mercerizing, after bleaching, or without mercerizing or bleaching, according to the order. The machines used are unique with American Thread, built to their specifications by Gaston County Dyeing Machine Co.

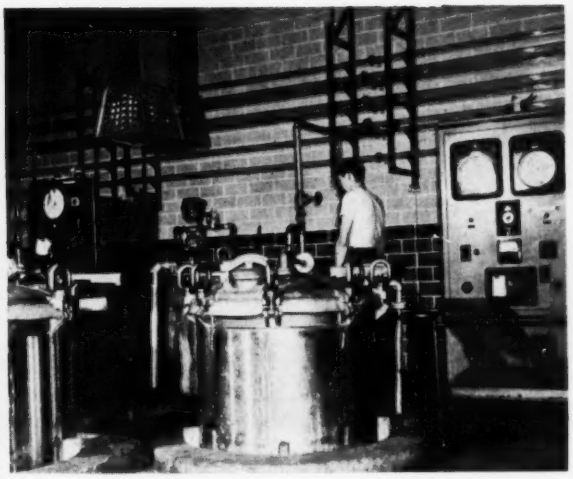
Operation of the machines is simple. The warp is wrapped with a "water band" to hold the yarns together and coiled into a "basket" of stainless steel by a special loading machine. The basket is lowered into the dye kettle and covered. Pumps circulate the dye liquor inside-out only. Naphthols, vats, developed dyes, and directs are dyed by standard procedures in this machine.

After centrifugal extraction, the warps are plaited on an apron dryer and are reballed after drying. This Andrews & Goodrich dryer also serves to dry skeins.

Skeins of variegated yarns for the domestic market are dyed on Buhlman dip-action machines. These machines can be made to rotate the skeins for solid-shade dyeing or to dip the skeins to a preset depth without rotation for multicolor effects. Four of these machines, plus 22 arms of Smith-Drum

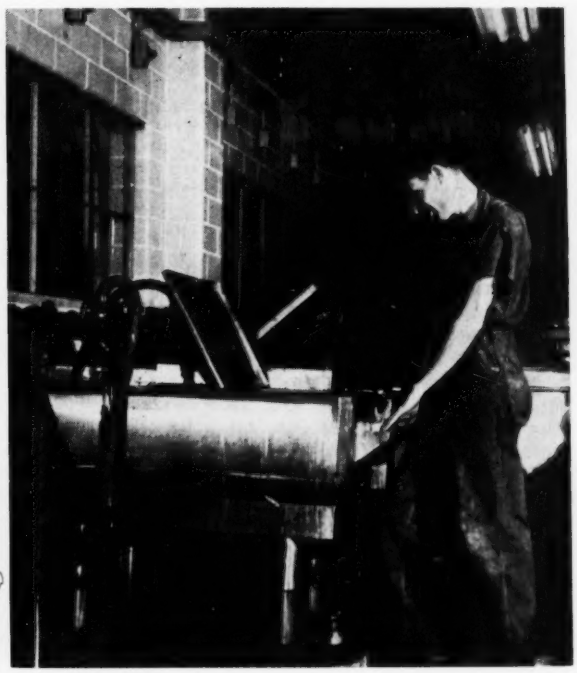


PYREX GLASS TUBING carries dye liquor to the machines. Pyrex glass is used because of its ease of cleaning and its resistance to chemicals.



PACKAGE DYEING on springs or tubes is done in this Gaston County machine, one of six at the Sevier plant. Eight Smith-Drum and one Obermeier machine complete the setup.

FINISHED CONE WINDING, direct from dye packages, readies the yarn for shipment to the knitting trade. If necessary, yarn is also singed during this operation.



PORTABLE BOIL-UP TANKS in the drug room are mounted on casters so that they may be moved to convenient locations for weighing, boiling up, and transfer of dye solutions to the proper machine.

Cascade machines, are in operation. A Proctor & Schwartz pole dryer is being installed to facilitate skein drying. Centrifugal extractors are used for all skein work.

Package-yarn dyeing facilities are extremely flexible to permit handling of 12 to 672 packages of yarn in one batch. To handle this wide range of capacities, American has four Gaston County table-model machines that carry 12 to 56 packages; one 672-package Gaston County machine; two 672-package machines, one 448-package, one 224-package, two 100-package, and two 50-package Smith-Drum machines; and one 233-package Obermeier porcupine-type machine.

Spring or Dytex-tube packages are wound on Foster winders.

Dye procedures for the yarns are standard. Only cotton and a few cotton-rayon blends are handled at Sevier; and dyes used are vats, naphthols, developed, and directs, according to the needs of the market. All package-dyed yarns are extracted in Smith-Drum individual-package centrifugal extractors and dried in Proctor & Schwartz oven-type tray dryers.

Are You Going Into FULL-FASHIONED OUTERWEAR ?

Here are some points worth considering if you are thinking about full-fashioned outerwear—

- **Fashioned rib garments require latch-needle machines**
- **Plain-fashioned garments are now made on high-speed machines with fine-gauge hosiery-machine features**
- **Quality knitted outerwear requires many highly skilled hand operations**

By J. B. LANCASHIRE, Leicester College of Technology

FULL-FASHIONED SWEATER BODIES can be made on V-type latch-needle machines and spring-needle machines of the type covered by Cottons's patent.

The rib ends are generally made on the latch-needle machines, but the spring-needle Cottons-type rib machines produce better-looking and more-elastic ribs. The spring-needle machine also produces the ribs more cheaply than the latch-needle machine.

Fashioning on the latch-needle machines is generally done by loop transferring points or by transferring loops from one bed to the other with special needles. Hand transferring of loops is still done on some coarse-gauge sweaters.

Only V-type machines can produce fashioned garments in rib stitch. These machines are also capable of producing coarse-gauge garments with full-cardigan rib bodies and sleeves made in raglan styles. Fashioned garments in cable stitch can only be produced on hand-controlled flat machines.

A Word of Caution

The promising full-fashioned sweater trade has caused many full-fashioned hosiery men to turn their eyes in the direction of outerwear. One hosiery-machine builder, in anticipation of a larger demand for full-fashioned outerwear machines, has built a four-section sweater machine.

The techniques of sweater knitting are quite different from modern hosiery knitting, where stockings are rarely handled between knitting and seaming. More hand operations are required to make good sweaters, loopers must be retrained, and finishing processes are vastly different from those used in hosiery finishing.

This article describes the processes in knitting full-fashioned sweaters. A close study of it will give a hosiery knitter some idea of the techniques he will have to learn if he goes into full-fashioned sweater knitting.—EDITOR

Outerwear Machines Now Have Hosiery-Machine Features

Plain-fashioned bodies and sleeves are invariably knitted on spring-needle Cottons-type machines. Modern machines for this work have many of the features that have been exclusive to the fine-gauge hosiery machine.

These machines are now built with a central control and 12 knitting sections each 28 ins. wide. Knitting speeds of 65 courses per minute, which is equal to about 130 courses per minute on a hosiery machine, have been obtained.

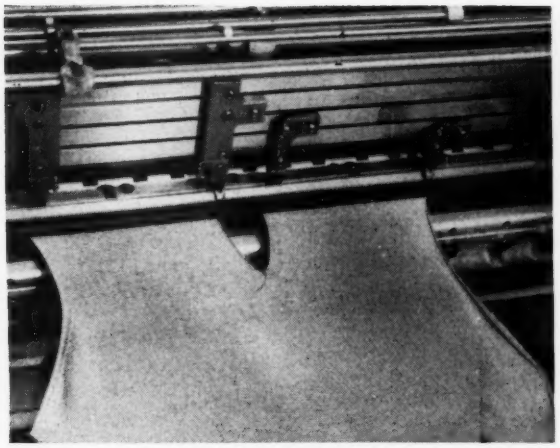
Coulier motions have been improved, needle bars and catch bars redesigned, and knitting movements shortened. Variable-speed motors have been introduced to slow machines down for fashioning courses.

The modern full-fashioned outerwear machine has split dividers across the full width of each section, hooked knockover bits with up-and-down movement and to-and-fro movements, sinkers of reduced height with longer bearing surfaces, needles with shorter beards and eyes, and spring-retained jacks. The jack springs, controlled from a rocking shaft, hold the jacks in a forward position after the slur cam has drawn across to keep the sinkers level during dividing.

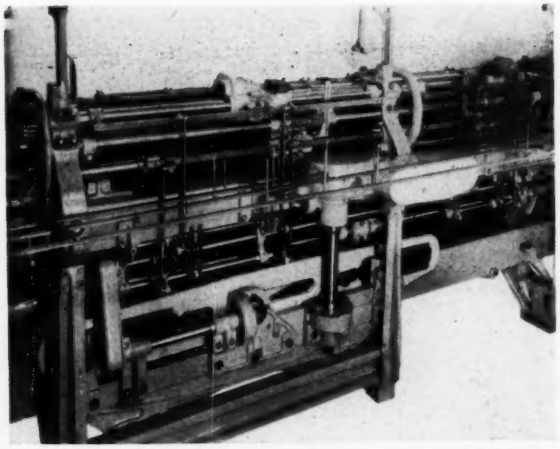
The carrier and slur cam are controlled by separate draw bars. The carrier has a constant lead over the slur cam in both directions of motion, irrespective of the carrier-stop positions. Cams and countercams now make the backward and forward movement of the catch bar more positive.

V-Neck Sweaters Require Two Extra Narrowing Fingers

An extra carrier and two extra sets of narrowing fingers on each section



V-NECKS are knitted with two carriers. Four fashioning fingers allow shaping at both the armhole and the neck at the same time.



NEW DRAW MECHANISM drives the horizontal rack bar and the pinion at the bottom of the vertical shaft to minimize power loss.

allow V-necks to be made. The second carrier has a constant lead. This machine has four fashioning bars so that independent fashioning can take place at the neck and armholes at the same time.

A third carrier is fitted to one machine to make a square-shaped neck opening. This carrier is frictionally driven to knit roving courses while the other two carriers knit shoulder pieces. A three-carrier attachment is supplied on this machine for horizontal striping; and by drawback courses, it is possible to make any three-colored striped garments.

Full-fashioned machines narrow or widen one or two needles with each set of narrowing fingers at every fashioning course. Narrowing is usually done by moving the narrowing fingers across two needle spaces.

"Filling in" Prevents Holes During Widening

Widening is generally done over one needle, and the emptied needle is filled by lifting a loop onto the empty needle from the previous course. The "filling in" is done by the point away from the selvage; this point is not lowered until the other points have engaged with the selvage needles to flex them toward the machine front.

The flexing of the covered needles allows the filling-in point to penetrate a fabric loop. After the loop is lifted, it is moved sideways with the other points to place the loop on the empty needle.

When any two parts of a full-fashioned garment have to be knitted on different machines, they should be joined together by knitting one part first and transferring the part to the second machine. The loops of the last course of the first knitted part are run on the points of a transfer bar. These courses are then run onto the needles of the machine on which the second part is to be made.

The two parts are joined exactly as though they had been knitted on the same machine. However, there can be a difference in the number of wales in the two parts. In running on the loops of a 1x1-rib course, two loops may be placed on certain needles so that the rib part may fit more snugly without exerting too much pressure.

Ribs Joined to Plain Fabrics By Looping

It is not practical to transfer plain fabric to rib machines; so ribs must be joined to the last knitted end of a plain fabric by looping or hand joining. The latter method of joining can rarely be distinguished from the machine-knitted course of the plain fabric.

Sleeves can be joined to the bodies by placing the selvage loops of the bodies on the needles of the knitting machine before the sleeves are started. The sleeve rib is attached afterwards on a looping machine.

The alternative method is to place the loops of the last course of the sleeve rib on the points of the transfer bar and transfer them to the needles of the plain machine before the sleeve is knitted. This sleeve is joined to the body by side looping.

A single-chain stitch looper is often used for this work to make the seams as flat and inconspicuous as possible.

Except when fabric is run on needles at right angles, several roving courses and a slack course must be made when loops are to be transferred from one machine to another. The slack course is not essential, but it helps the looper to locate the correct course. The roving courses allow the running on to be done safely without disturbing the slack-course loops.

Fabrics May Soon Be Automatically Transferred

Transferring fabric directly from the knitting-machine needles to looper points is in an experimental stage. If it can be done successfully, the running-on operation will be eliminated and the roving-course yarn will be saved.

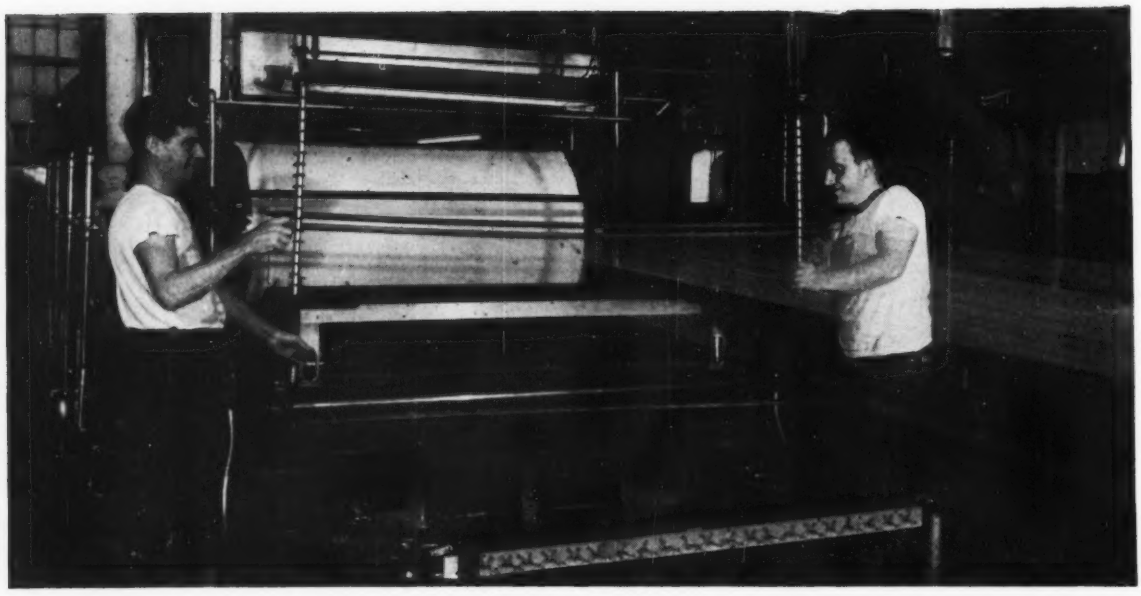
Fabric is knitted to the required length, the needles are covered by points, and the loops of the last course are transferred to the points. The point bar collects the fabric pieces from all the knitting sections, and the pieces are transferred to another point bar on a stand adjacent to the looper.

As the looper dial revolves, the loops are automatically transferred to the grooved points of the looper. The rib or selvage loops are placed on the looper in the conventional way and joined to the loops from the point bar.

Although shaping is generally done by narrowing or widening with fashioning points, a sudden decrease in width requires a different method of shaping. Shaping can be done by moving the carrier stops without transferring the loops.

Hooked knockover bits allow fabric to be made satisfactorily without a drawing-off mechanism, but it is customary to apply some tension to the fabric because it helps to promote greater fabric uniformity.

Inserting a rod in the fabric to extend it widthways often overcomes troublesome fabric curling and rib-fabric contraction.

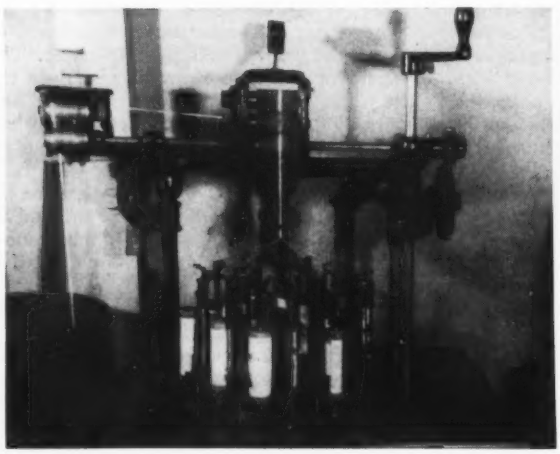


PERFECT LEASES at the slasher are the basis of Toscony's successful tying-in and drop-wire-pinning program. Wallace Whitelaw and Roger Graham take a lease from the single hook reed.

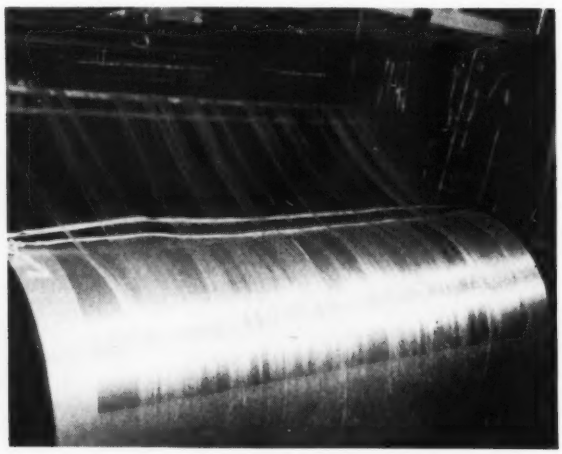
Fast WARP REPLACEMENT Permits Frequent Style Changes

► Small orders for cloth aren't frowned on any more at Toscony Fabrics, Inc., because the mill is set up to change low-denier filament-rayon warps rapidly. Machine warp tying in in a single "hand" and an automatic drop-wire machine spearhead the warp-replacement program.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD



THE TWINE used for leasing warps is made beside the slasher on a braiding machine. Since little time is needed to keep the machine operating, the slasher operators keep it running.



DROP WIRES are not placed on the warp ends during drawing in. The time required to draw in these 8,900 acetate ends is 4½ hrs. The automatic drop-wire machine does the job in 47 mins.

Toscony Fabrics, Inc., Pawtucket, R. I., is prepared to change warps quickly at the looms because orders for as little as 2,000 yds. of cloth are accepted. Large orders are seldom for more than 58,000 yds. of cloth.

Beginning at slashing and continuing through tying in and drawing in, Toscony has bought equipment and developed methods for warp replacement that places it in a competitive position with mills weaving large orders of cloth.

Most fabrics at the mill are woven from 75-den. filament-rayon or acetate warp yarns. Taffetas, satins, umbrella fabrics, shower-curtain materials, etc. are woven. Other cloths are woven from 75-den. dope-dyed warp yarns. Leno stripes in nylon fabrics are also woven.

Get Perfect Leases in Slashing To Tie Warps with a Single Hand

The success of the entire warp-replacement program is dependent on how accurately the leases are placed in the warps at the slashers. Perfect leases are necessary to tie complete warps in a single hand with a tying-in machine. Perfect leases are also necessary to successfully operate an automatic drop-wire machine used in warp replacement.

Leases are taken at a single hook reed on a seven-cylinder slasher to obtain end-and-end leases on every loom beam. Two complete leases are taken at the reed before each loom beam is doffed. The leases are separated with wooden lease sticks, and the sticks are replaced with a medium-size twine.

After the lease twines run over the cylinders to the slasher drag roll, they're replaced with braided lease twines. One complete lease is run past the drag roll, and ½-in. masking tape is stuck to both the bottom and top of the warp 1½ ins. from the lease to hold the warp ends secure. The second lease is prepared the same way, and the doffed yarn is cut between the leases so that both the end of the doffed beam and the beginning of the new beam have complete leases.

To hold the yarn on the doffed beam secure, the end of the yarn is tied around the beam with the medium-size twine used for the preliminary lease. For additional protection, a heavy paper completely covers the yarn.

Slashed beams are stored in a floor area near the drawing-in department that is also near the looms since both the departments are in the same room.

Prepare Every Warp Accurately For Best Results in Tying In

Warps to be tied back to patterns in the looms are tied with a Little Uster Model 2 tying-in machine. The procedure followed in preparing the old pattern for tying back a warp on a C&K S-loom is:

1. The warp stop-motion and clamps are loosened, and the contact bars are placed on the flat surface of a 1x2x8-in. wooden block laid on the contact-bar spacers.

2. On plain weaves, a lease is taken from the harnesses. Half the harnesses are up and half are down. An oval-shaped wooden lease rod is placed back of the drop wires to hold the lease. Then the harnesses are reversed, and a second lease is taken.

If the weave is a dobby weave instead of a plain one, the lease strings placed in the warp at the slashers are used for leasing the warp.

3. A wooden clamp is fastened to the yarn near the loom beam about 60 ins. from the drop wires. The lease sticks are pulled back against the clamp, the yarn is cut at the beam, and the clamp, lease sticks, and yarn are rolled up together and placed against the drop wires.

The yarn on the new beam is prepared this way:

1. The new beam is placed in the loom and left loose

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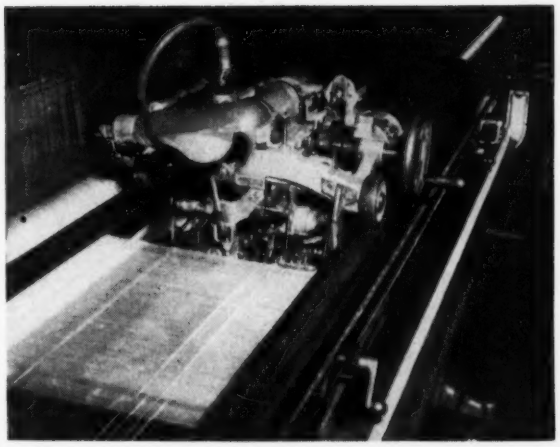
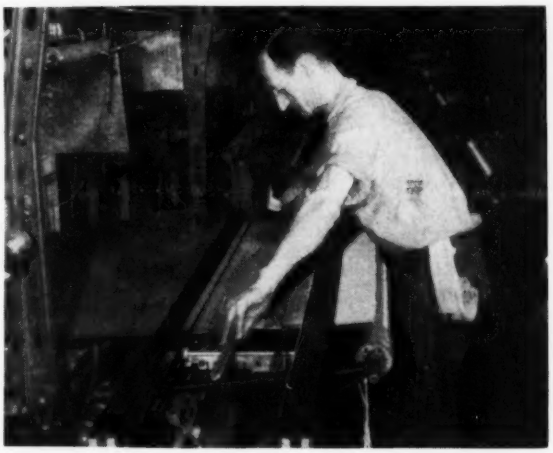
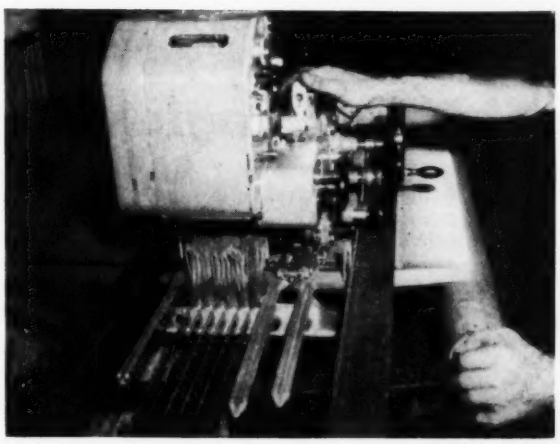


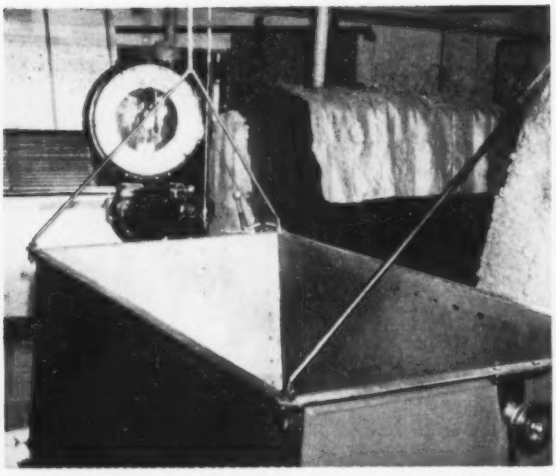
TYING IN follows careful preparation of the ends of the old and new warps. When the machine is set up and operating, the operator goes away to his other work and the machine runs itself.



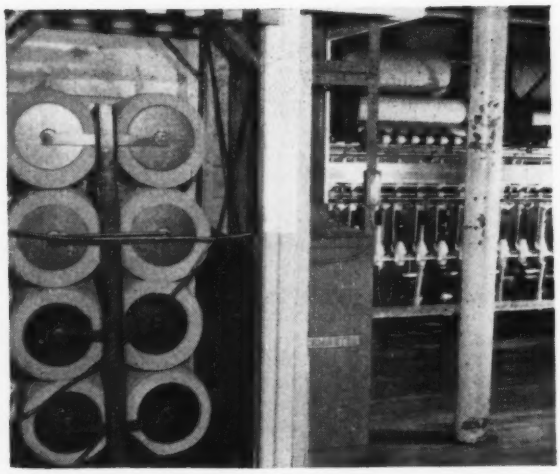
THE WARP is being prepared on the loom to receive the drop wires from the automatic drop-wire machine. Machine operator Hermas Morissette is taking an end-and-end lease.



THE MACHINE that places drop wires on the warp ends at the loom is motorized and runs itself. The only attention given the machine during operation is the addition of drop wires to the feed rack.



BENOIT SYSTEM OF BLENDING processes batches of 100 lbs. of wool at a time. Addition of emulsions takes place after the stock drops down onto latticed apron, below the floor.



JACK SPOOLS OF ROVING are brought up to the spinning frames on the second floor by means of a dumb-waiter elevator that requires no operator to travel between floors.

SANFORLAN-TREATMENT CHEMICALS are fed into the dyebeck with this rig. Chemical feed is gradual to allow thorough and even distribution.

STANLEY FAGAN, dyer, (left), keeps a careful check on the progress of the shrink-resisting treatment. This process calls for special attention.

This New England Mill Runs Full Time on WASHABLE WOOLENS

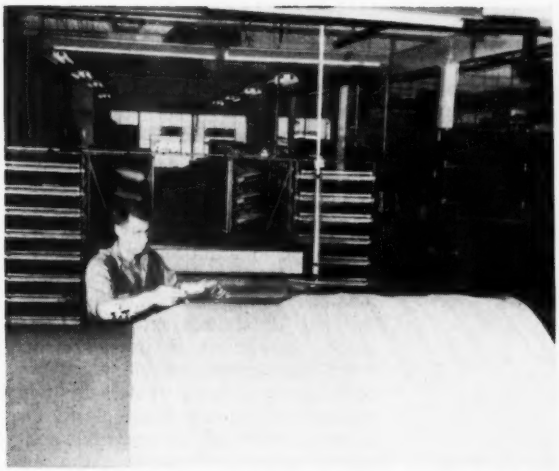
Secret of Carleton Woolen Mills' success is

- **Concentrating on a single type of fabric much in demand**
- **Working cooperatively with a union that realizes that being on the ball means lowered costs, increased sales, and continuous three-shift employment**

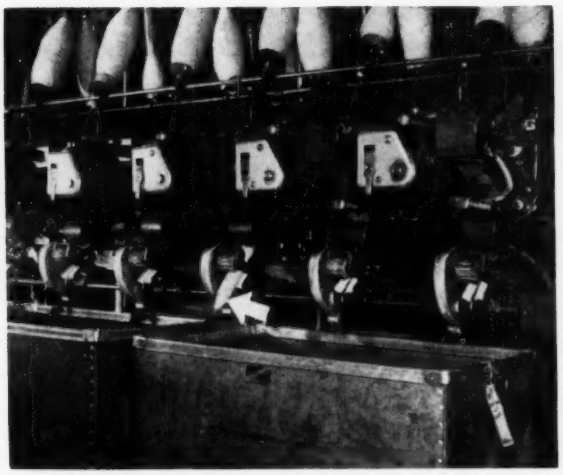
By RICHARD C. SCOTT

CONCENTRATION ON A single type of fabric—9- to 13-oz. washable woolens made from singles yarns—has enabled Carleton Woolen Mills, Inc., Rochdale, Mass., to keep running three shifts all year round.

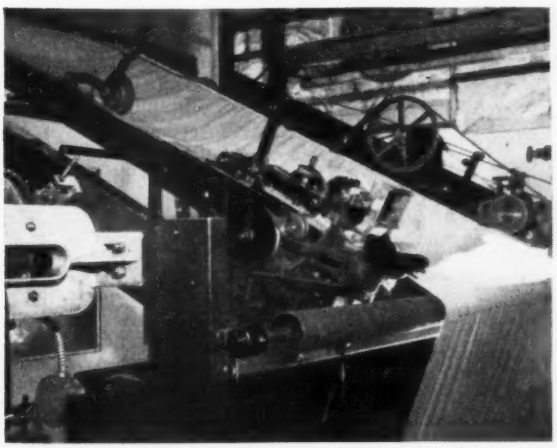
The fabrics, which are much in demand today, are finished in a wide range of colors for shirtings and dress goods.



DRUM-WARPER can hold enough yarn at one time to make 30 80-yd.-cut beams. Yarn is warped directly from spinning-frame bobbins set directly into the converted Entwistle creel.



MARKING OF FILLING BOBBINS is done automatically with two pieces of chalk (arrow) held in position so the finished quill is forced over it on its passage down to the filling box.



OVERFEED DRYER pulls at least 30% of extra fabric in the drying operation. Drying is done at dyed width of the fabric, as measured after dyeing.

How the Mill's Work Force Is Distributed Over Three Shifts

Foremen	4
Mechanics and other maintenance	12
All second hands	11
Picking and carding	22
Spinning	32
Dressing, winding, weaving	54
Dry and wet finishing	24
Dyeing and carbonizing	8
Office help	4
Total employees	171

But there is more to the story than concentrating physically on a single type of fabric. Equally important are two facts: (1) The mill has capable employees, many of whom have been with the company for many years, and (2) the company and the union work together harmoniously.

In the words of John Hunter, superintendent, "The secret around here is that everyone works hard and is on the job all the time, doing his best, because everyone knows that that's what keeps the orders coming in." And Mr. Hunter and Edward LeVeen, Jr., mill manager, looked as hard working as any of the other employees.

How Washable Woolens Are Processed

The mill buys 64s and better wool, from both Australian and domestic sources, and in some constructions uses 15% nylon staple.

Opening through weaving is done on standard equipment. A minimum of handling of stock has been obtained by a judicious mill layout. Feeders, blowers, trucks, and convenient location of machines give an even flow of stock.

The equipment used by the mill is as follows:

Opening—1 Benoit-system unit
Picking—1 Abington triple-vacuum unit
Carding—4 Whitin G-4 72-in. woolen cards equipped with Peralta rolls
Spinning—12 Whitin 144-spindle, 6½-in.-gauge Model-L spinning frames
Dressing—1 Entwistle bobbin creel 1 Whitin warper
Winding—72 spindles of Whitin-Schweiter winding with automatic overhead feed. Six of the spindles have an automatic chalk-marking arrangement.
Weaving—42 C&K W-3 looms
Finishing—Units for fulling, carbonizing, Sanforlan treating, decating, and shearing

In the dyehouse, 38 different yarn colors are now produced for 180 different patterns for the new season's fabrics. The flow of goods is through fulling, washing, carbonizing, dyeing, and neutralizing. If chrome dyes are used, dyeing comes before carbonizing.

The Sanforlan process (a wet-chlorination procedure) to make the woolen fabrics washable is the last wet process. After drying, cloth is sheared and decated before being shipped.

Fluctuating Steam Loads Call for HEAT STORAGE

► With stored heat ready to meet peak loads, boilers are fired at a constant rate. Heat energy can be stored as live steam, as preheated feed water, and as hot process water. Here is a survey of accumulator storage methods.

By LEO WALTER

THE DEMAND FOR STEAM in most plants comes in short and sharp peaks. A fluctuating steam demand affects the efficiency of the steam mains: a fall in pressure with an increase in specific volume increases the amount of energy lost in the pipe system. This loss may amount to 50% more than if the boilers operated under steady load conditions.

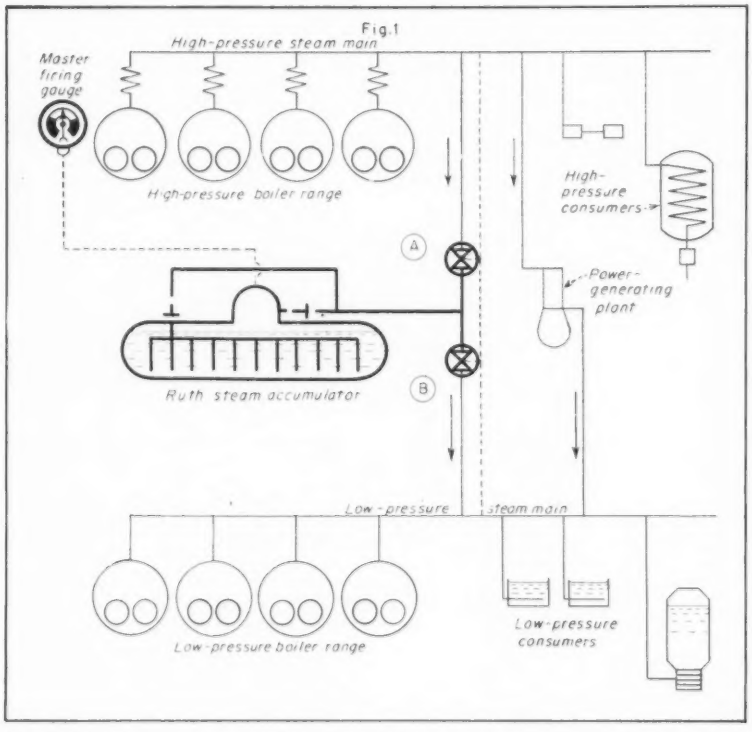
But higher efficiency will result if thermal energy is stored in readiness to meet peak demands and the boiler is fired at a constant rate. Thermal energy can be stored as (1) live steam, (2) preheated feed water, and (3) hot process water.

Storing Live Steam

Steam storage is called for if steam is generated partly at high pressure and partly at low pressure. In the absence of a steam accumulator, the average steam demand may fluctuate as much as 80%, and the demand must be met by frequent changes in the rate of firing. Such conditions give a varying steam pressure, and inefficiency results in the boiler house and in the steam consumers. These difficulties are, however, not encountered if an accumulator is in the circuit, because the rate of firing the boilers remains steady, as does the pressure in the high- and low-pressure mains. A typical layout is shown in Fig. 1.

However, the steam accumulator is not the best unit to install if the steam demand is almost entirely at the higher pressure and if the margin between this pressure and the maximum boiler pressure is very small. In such instances, the boiler must always be on top of the load. If the output periodically exceeds the demand, the surplus steam can be stored only if the low-pressure demand is large enough to prevent the accumulator from becoming overcharged. This problem is solved by storing preheated feed water.

Fig. 1



LIVE STEAM is stored if steam demand is at both low and high pressures. The overflow valve is shown at *A* and the reducing valve at *B*. A gauge in the boiler house indicates the amount of steam in storage.

Storing Feed Water

Storing preheated feed water is generally advantageous if the steam is used mostly at boiler pressure.

The feed-water accumulator system insures a constant rate of firing, a uniform rate of feed supply to the boiler at full steaming temperature, and a constant rate of evaporation, pressure, and superheat. Surplus steam is used to create a reserve of preheated feed water at or near saturation temperature; so the peak load-carrying capacity of the system depends on how much the feed-water temperature can be raised. In most instances where the feed-water accumulator is applicable, peak loads up to 30% above the average demand may be met without a drop in steam pressure. Short, sharp peak loads above the capacity of the plant are met by boiling from the pressure drop in the boilers and accumulator. The water level in the accumulator is indicated by a master firing gauge in the boiler house, and this gauge warns the firemen of any change in the rate of firing.

In Fig. 2 the accumulator is arranged in open communication with the high-pressure steam main. The feed water entering the system is handled first by the accumulator feed pump, and the feed-water discharge rate is controlled by a valve. This valve is opened and closed by a pressure impulse from the high-pressure steam main, and feed water passes through the valve into the direct-contact heat exchanger, where surplus steam is condensed. Hot water is produced, and then it passes to the storage vessel to be drawn by the boiler feed pump. The opening of the valve, the rate of steam condensation in the

heat exchanger, and the height of water in the storage vessel are governed by the variation of steam demand in relation to the amount produced. In effect, the feed-water accumulator consumes steam, but during peak-load periods it is automatically cut off the line.

Storing Hot Process Water

Hot-water storage is most advisable if the peak loads of heat and power generation in the boiler and power house do not coincide.

Correct storage of hot water in adequate volume avoids boiler peak loads and improves output from washing, scouring, bleaching, and dyeing departments because warm or hot water is always available at the desired temperature and in the required amount.

Using warm water instead of cold water to fill process vessels (for example, dye vats at 100 to 130° F.) accelerates the boiling process, reduces steam consumption from boilers, and reduces dilution from the condensing steam. In one instance, dye-vat boiling-up time was reduced by 13 mins. per boil, dilution dropped from 16.7% to 7.4%, and shades were improved.

If back-pressure or pass-out reciprocating steam engines are used, hot-water generation is the best way to use the de-oiled steam all during the year. If diesel engines can be fitted with an exhaust heat exchanger for hot water or with a waste heat boiler that uses jacket water and exhaust gases, their thermal efficiency is greatly increased. Hot-water production from diesel engines should be the rule in plants with a finishing operation.

Hot water can be generated by instantaneous steam-water heaters with an ejector or steam nozzle or by instantaneous indirect heaters, with a heating coil. Generators are recommended as auxiliary units under certain circumstances, and they are recommended to boost temperature at scattered locations; but holding the hot-water temperature depends on storage capacity. The controllability of an instantaneous indirect heater is not favorable because of its lack of storage, but the controllability of a large storage tank is very good. Controlled hot-water storage in large tanks is recommendable from every point of view.

Mills Add a Calorifier

In textile mills, a hot-water storage calorifier is often used with a separate heater outside the main storage vessel. The accumulator vessel is always completely filled with hot water. The higher the storage temperature, the smaller the storage volume, and ther-

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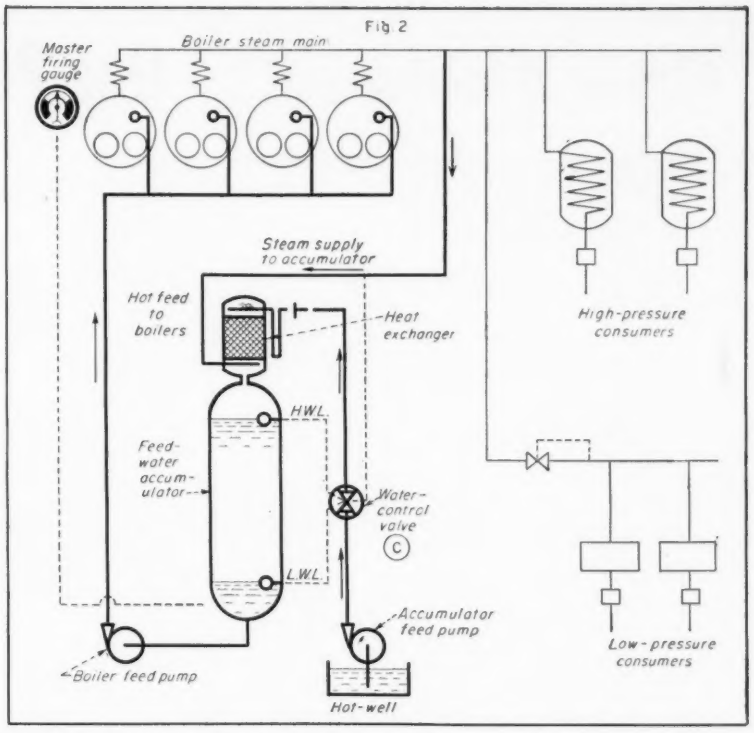
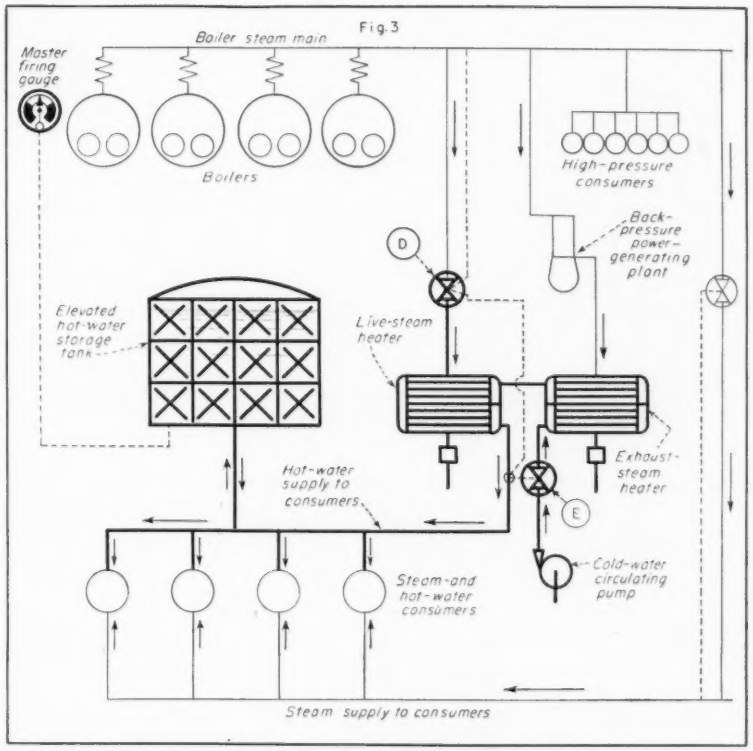
Fig. 2



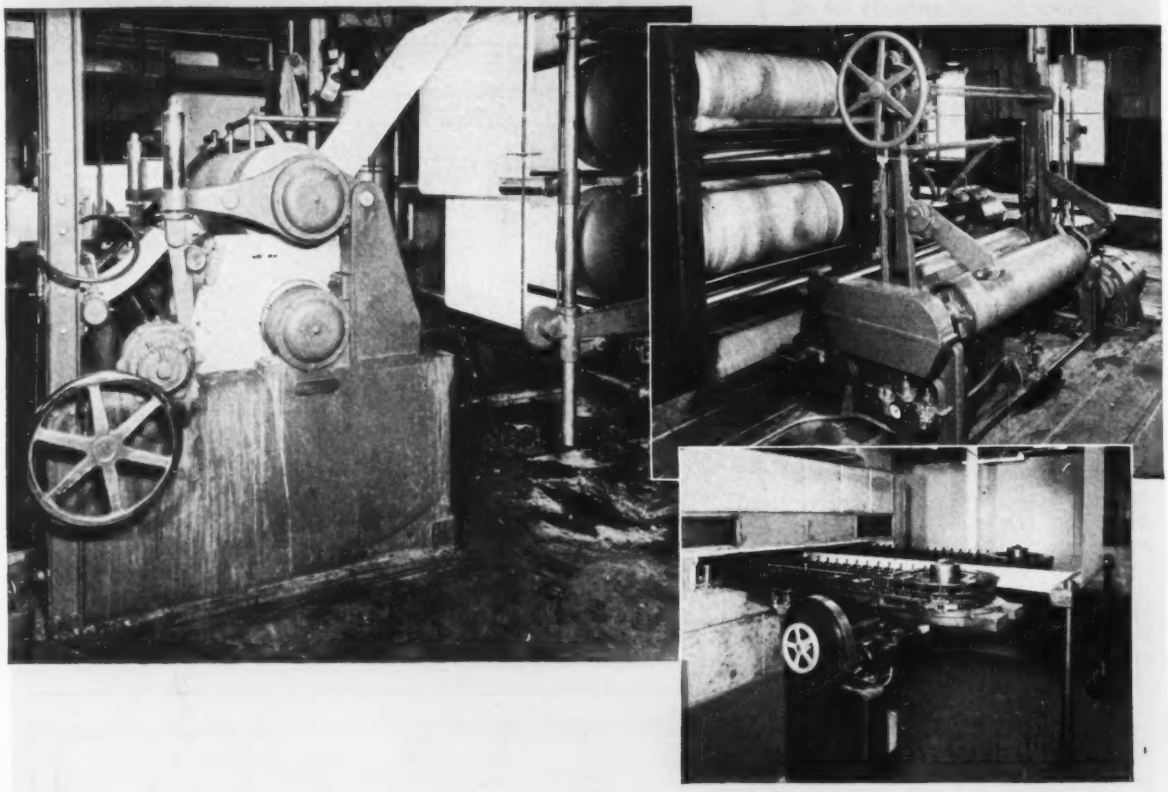
FEED WATER is stored if most of the steam demand is at the higher steam pressure. The accumulator is arranged in open communication with the high-pressure steam main. During peak loads, the accumulator is cut out.

Fig. 3



HOT PROCESS WATER is stored if peak and power loads do not coincide. This installation uses back-pressure power generators and two surface heaters in series. The storage tank covers rate and demand variations.

Four Machines . . . One Production Plan



Here are four Butterworth Machines in a well-known wet finishing plant — tenter, calender, padder, cylinder dryer.

Each machine plays a part in the mill's overall production plan. Each was selected from the complete Butterworth line based on a careful analysis of production problems — fabrics being processed, space limitations, length of runs and many other factors.

The Butterworth Straight Automatic Tenter, with speeds in excess of 200 yards per minute, is adaptable to the widest range of fabrics.

Butterworth Calenders are made in many types and sizes from light 2-roll machines with lever pressure or micro-set to 7-roll hydraulic machines.

Butterworth Padders operate easily and accurately up to 15-ton loading pressure, either micro-set or pneumatic. Choice of 2-roll or 3-roll mounted in spherical roller bearings for long trouble-free life.

Butterworth Cylinder Dryers are made with copper or stainless steel cylinders, vertical or horizontal arrangement, fabricated or cast iron columns, gear or sprocket and chain drive.

Let a Butterworth engineer give you facts and figures on a production-planned installation of Butterworth Machines — for increased yardages, lower production costs.

TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION ATLANTIC CITY APRIL 26-30 1954

H. W. BUTTERWORTH & SONS CO.

Bethayres, Pennsylvania

1211 Johnston Building, Charlotte, North Carolina
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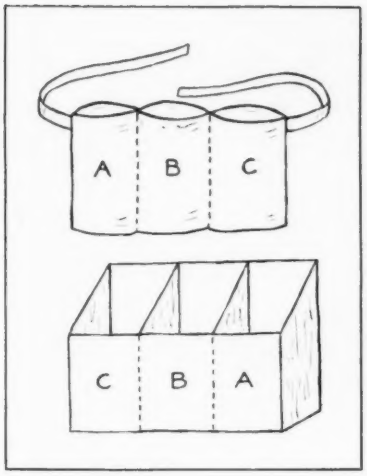
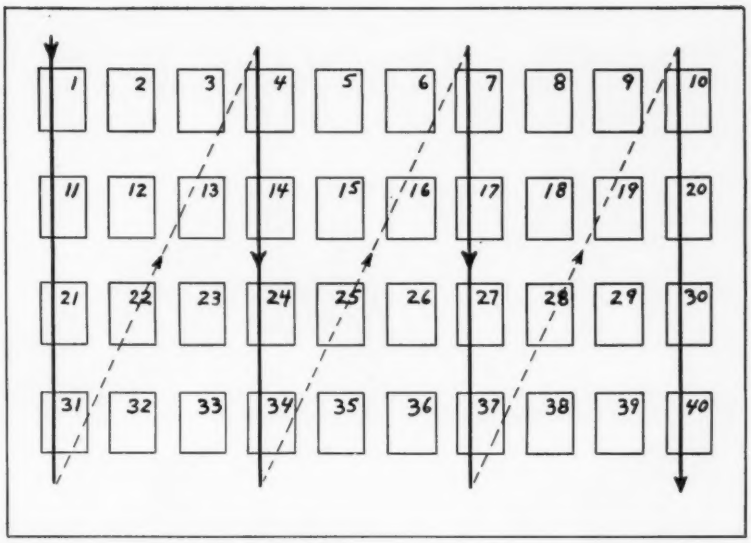
Machines for Bleaching, Boiling-Out, Mercerizing, Dyeing, Finishing and Embossing : : Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH



WASTE APRON AND BOX should hold the same type of waste in pocket and section opposite each other to make it easier for the spinner to deposit her waste in the right place.



CLEANING SEQUENCE should take one frame from each operator's group rather than in the numbered sequence. Workloads and ends down are maintained more equal this way.

WASTE AND CLEANING Tips For the Spinning-Room Overseer

To keep spinning-room waste low and to reclaim it at its highest value—

- **Use aprons and waste boxes to keep types of waste separate**
- **Collect waste every shift, especially if you are running blends**
- **Organize a cleaning schedule to keep workloads as uniform as possible**

By N. H. POMFRET

AN EFFECTIVE FRAME-CLEANING schedule and proper routines for waste separation and collection are the most important measures for reducing and reclaiming spinning-room waste.

The amount of waste made as a result of piecing up ends is small in a well-managed department, and it should be kept small by keeping end breakage to a minimum and inspiring the operators to a high patrol frequency.

Waste that should be separated includes (1) soft reworkable waste from laps on the underclearer, (2) roving waste from the insertion of a full roving bobbin, and (3) hard waste from the frame bobbins. The amount of hard and roving waste is usually so small that there is a danger of the spinner putting both types into the reworkable waste and reducing its reworkable value.

To keep this waste separate, spinners should be provided with a three-pocket apron, a separate pocket for each type of waste.

At the end of each frame, a three-section waste box made of wood or sheet metal should be provided, and each compartment should be marked with the type of waste. To make the transfer easy, the waste should be kept in the pockets directly opposite the box sections marked for that particular kind of waste.

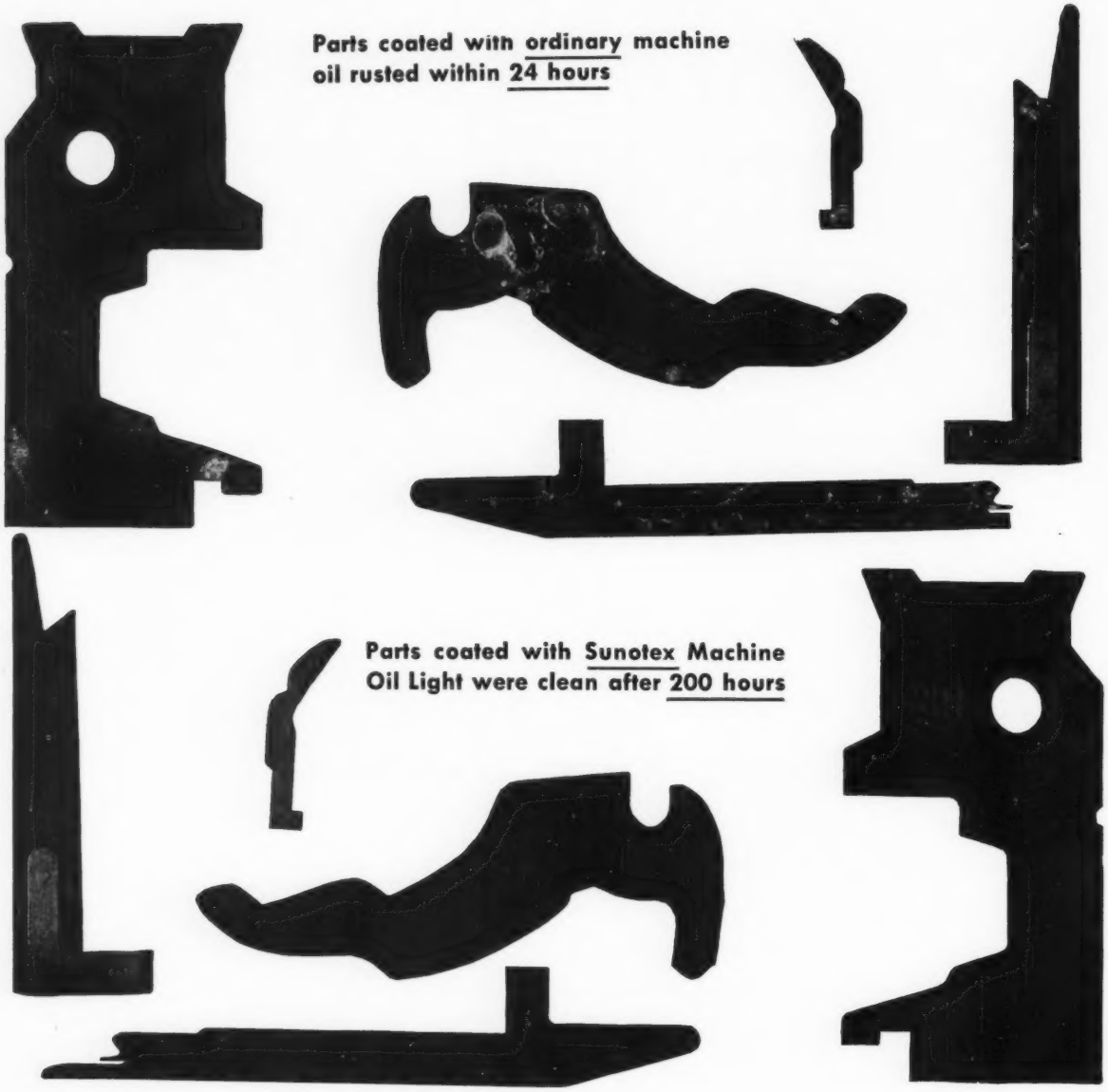
The waste collector should have sufficient knowledge of the waste types to take them directly to the appropriate department or machine, particularly if different fibers or blends are spun in the same department. In such a department, it is imperative that all waste be collected every shift, and reworkable waste must be taken back to the card room and put back into the right blend every shift. If reworkable blend waste is left lying around for some time, it is hard to get anyone who understands the characteristics of synthetic fibers to take the responsibility of putting the waste into any blend.

Here's a Typical Cleaning Program

Accumulation of fly on the drafting mechanism has a particularly bad effect on yarn cleanliness. To reduce this effect to a minimum, these accumulations must be removed regularly. The end-breakage rate is often reduced 10 to 20% after the rolls have been cleaned and lubricated.

The cleaning schedule for spinning frames should be organized so that all of one spinner's frames are not cleaned at the same time. This schedule depends on the number and type

CONTINUED ON PAGE 176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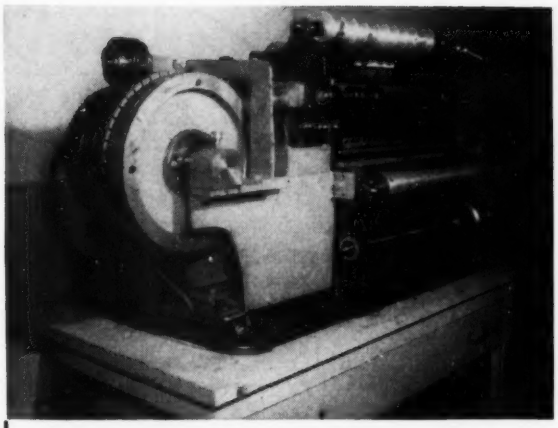
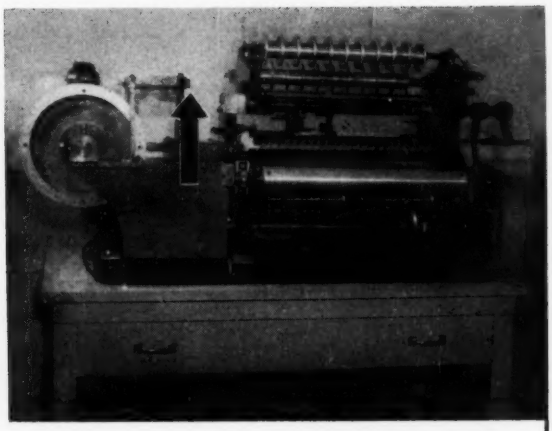


PATTERN CHAINS allow tricot designs to be extended in length. Patterns can also be made with repeats that are not factors of 48 courses.



SPROCKET on worm-wheel shaft can be changed for ratio variations. The new guide-bar slides are pushed to the chain by a compression spring.

How Dover Mills Extended Sample TRICOT Designs

▸ **Unable to get enough designs from a sample tricot machine with stud pattern wheels, this North Carolina mill attached a pattern-chain drum mechanism and can now make unlimited patterns.**

A SAMPLE TRICOT MACHINE with 48-stud pattern wheels offers some restrictions to the tricot designer when certain fancy fabrics are called for. The design of these fabrics may require more than the 48 steps that are on the pattern wheel or may need a design repeat that is not a factor of 48.

Dover Mills, Shelby, N. C., overcame this objection to knitting certain fancy fabric samples by fitting its sample tricot machine with a pattern-chain drum mechanism.

The new pattern-chain drums are of large diameter and run in bearings fixed to a bracket bolted to the left frame of the machine. The bearings are well lubricated from an oil cup.

The worm wheel that drives the pattern drum is locked with Allen screws. These screws can be loosened to adjust the timing of the guide sidewise motion to the guide swinging motion.

Interchangeable Sprockets Allow Ratio Changes

The worm wheel is positively driven from a worm driven by an interchangeable sprocket. Sprockets with 24 and 48 teeth are used to get variable speeds of the pattern chain. If the guide-bar roller jumps are not too great, variations in pattern can be made by simply changing the sprocket.

The sprocket is chain driven from the main shaft. An idler sprocket is fixed to take up the chain slack when small sprockets are used.

The guide-bar mechanism has been modified so that the guide bar is pushed toward the pattern chain. (A compound-lever arrangement pulled the guide-bar roller against the wheel on the original machine.)

To obtain this positive action, the tension spring on the right of the guide bar has been replaced with a compression spring. This spring slides over a ¼-in. rod and bears against a collar on the rod.

The rod is slipped through a hole in the end guide-bar bracket, and the rod's sharp point fits in a hole in the guide-bar end.

Guide-Bar Slides Make for Easier Action

Guide-bar slides have been fitted to the pattern-drum frame, and the slide screws bear against a slide bar fixed to the guide bar. The screws are easily adjustable to allow quick changes in gating.

The large-size pattern drums accommodate long chain lengths. A wooden trough has been built to guide the chain away from the table edge. Where short repeat patterns are required, the pattern chain is made up of several repeats to fit around the drum.

The modification, which was engineered by Gibbs Machine Works, has saved downtime to knit patterns that were not possible on the old-type machine.

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Checklist for OPENING and PICKING

Here are 65 items to watch in opening and picking. The items have been alphabetized and broken down into condition, result, and remedy; and a suggested oiling schedule is included.

By JOHN E. ALLEN

Condition	Result	Remedy
Aprons		
Broken slats	Other slats will break. Cotton collects on apron shaft	Replace broken slats. Don't throw large pieces of cotton in machine
Broken canvas on spiked apron	Cotton collects on apron shafts	Feed small pieces. Don't throw large pieces against the canvas
Slack or loose apron	Apron slips and causes uneven laps	Tighten or replace. Make regular inpection
Jerky operation	Thin places in lap	Keep aprons tight and bearings oiled
Rolls not running freely	Slipping aprons, uneven laps, worn leather and rivets	Oil and grease bearings properly
Apron delivery		
Cages choked with fly	Weak drafts, curly cotton in machine	Maintain effective cleaning schedule
Bearings		
Sand and dirt in oil holes	Binding and wear of shafts and bearings	Keep oil holes clear
Beaters		
Dull blades	Poor cleaning	Sharpen blades or reverse the beater
Damaged or worn pins on Kirschner beater	Rough laps, poor opening, poor cleaning	Consider heavier pins. Keep foreign matter and thick places out of beater
Setting too close or far	Broken fibers, neppy card web	Reset and check settings periodically
Too many blows per inch	Broken fibers, weak yarn	Lower beater speed
Air currents around beater ends	Laps with poor selvage	Fit two pieces of tin around beater shaft at the hood

Condition	Result	Remedy
Beater boxes		
Dirty insides	Poor lap selvages	Check cleaning schedule
Belts		
Dry belts	Low speeds, lost production, belts wear quickly	Clean and dress belts
Dirty belts	Slipping belt, burned face of belt	Clean and dress belts
Cage leather		
Poorly fitted leather	Dirty cages, binding cages, faulty drafts, good cotton in dust chamber	Cut a piece of wood to the shape of the fastening plate. Fasten this block tight against the leather
Cage-stripping rolls and plates		
Sand and fly packed between rolls and plates	Worn stripping roll flutes, poor grip for cotton	Check cleaning system
Calender rolls		
Smooth rolls are rough	Dirt collects on rolls	Smooth rolls when you scour
Damaged flutes on lap calender rolls	Ragged selvages	Be careful when you put in lap bar or pin
Cleaning bars		
Bars set too close	Leaf and sand don't fall into dirt space	Grind off ends. Clean bars with black lead when machines are scoured
Cleaning-bar plates		
Fly packed between plate and cages	Hollowed cages between pulleys	Check cleaning routine

CONTINUED ON PAGE 129

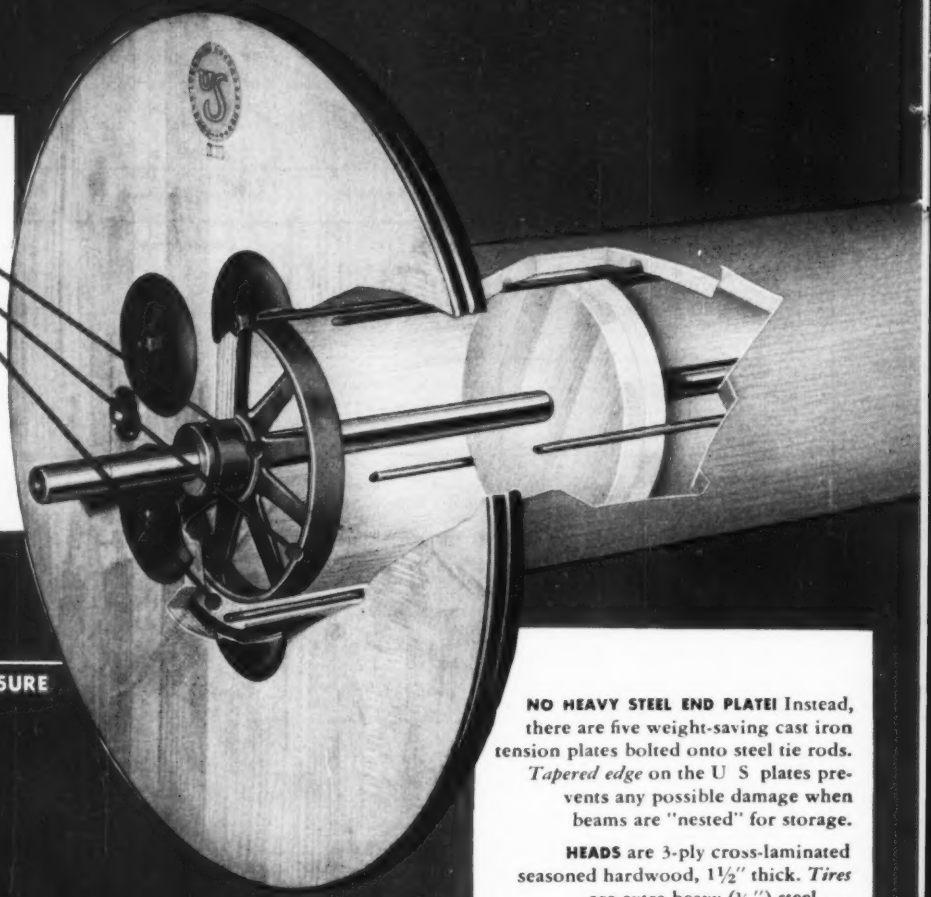
COTTON...spun rayon...and wool

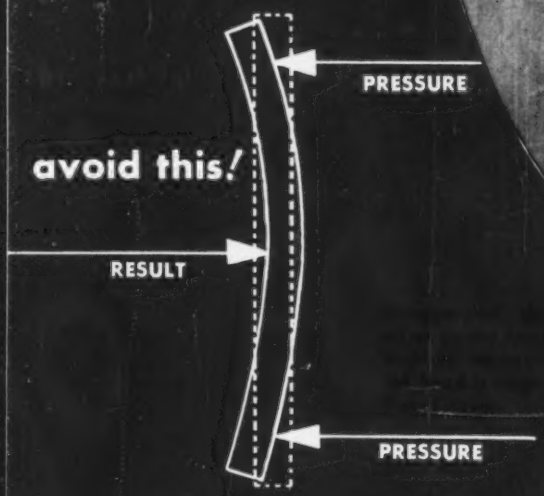
WARPER BEAMS

3-POINT SUPPORT FOR THE BEAM HEAD

shoulder at hub of casting
periphery of casting
ends of staves

U S Warper Beams are *all* built with 3-point support, which provides additional resistance against outward deflection during build-up of the beam.





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Opening and Picking Checklist *(Continued)*

Condition	Result	Remedy
Clutch bowls		
Worn bowls	Worn groove in clutch gear, gears cannot be set properly	Reset if possible; replace if not possible
Clutch gears		
Poorly meshed gears	Thin places in laps	Check setting or adjustment
Clutch lever		
Worn lever	Poorly set clutch gears	Replace worn lever
Condensers		
Maladjusted damper	Curly cotton	Reset damper
Cage wire chocked with fly	Weak drafts, curly cotton	Clean more often
Cages revolving too slowly	Curly cotton	Check to see if speed can be increased
Condenser fan		
Fan speed too high	Poor cleaning, unnecessary wear on bearings	Reduce fan speed
Cut-off plate		
Plate set too far from beater	Beater carries cotton around a second time	Check setting of plate
Distributors		
Maladjusted cotton feelers, gates, and automatic shippers	Uneven laps	Adjust
Doffer-roll leathers		
Leather set too close to spiked apron	Worn leather	Set further away from apron
Draft flues		
Dirty flues	Uneven laps	Clean more often
Maladjusted dampers	Uneven laps	Adjust dampers for the correct flow of air

Condition	Result	Remedy
Dust chimney and chambers		
Chimney and chambers full of fly	Poor drafts, danger of serious fire	Check cleaning schedule
Evener motions		
Oily cones Evener cones not operating steadily Belt guides spaced too widely Loose and worn gears and studs	Uneven laps	Develop system of machine inspection that will show conditions needing correction
Evener pedestal boxes		
Dirty pedestal shaft Dirty or rusty pedestal bearings Pins with dull points	Uneven laps	Clean and smooth down rusty parts when machines are scoured. Maintain cleaning schedule.
Fan exhaust pipes		
Pipes out of line	Back drafts	Align pipes so that fans exhaust directly into dust chamber without interference
Feed rolls		
Choked flutes Worn necks Worn bearings	Feed rolls don't grip fibers firmly. Cotton is taken away in bunches; bunchy laps	Maintain effective oiling and cleaning schedule
Frictions		
Dirty and worn leathers	Soft laps	Replace bad leathers
Too much weight	Hard and split laps	Adjust for proper lap density
Gears		
Worn, loose, and improperly meshed gears	Thin places in lap	Inspect gears to see which ones should be replaced or reset

CONTINUED ON PAGE 131

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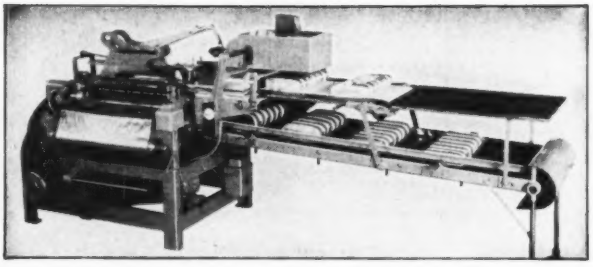

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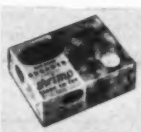
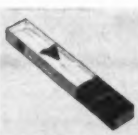

FROZEN FOODS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Opening and Picking Checklist *(Continued)*

Condition	Result	Remedy
Grid bars		
Improperly set, choked, or dirty bars	Fly doesn't drop between bars	Check settings when machines are overhauled. Check cleaning schedule
Lap bars		
Bars carelessly thrown in	Damaged lap cheeks, lap bars, calender rolls, and flutes	Be careful when you put in lap bar
Lap cheeks		
Damaged lap cheeks	Poor lap selvages	Be careful when you put in lap bar
Lap racks		
Rolls worn, not revolving, or set unevenly	Soft laps	Lubricate rolls. Set racks so they are even on both sides
Lap sticks		
Different weight sticks	Variation in lap weight, uneven sliver	Check to see if sticks are same weight
Lap trucks		
Not enough trucks	Excessive handling of laps, dirty laps	Have enough trucks so laps can be placed on trucks as they are doffed
Picker cages		
Choked cages	Weak drafts	Check cleaning
Jerky cage motion	Thin places in laps	Check for back lash in gearing

Condition	Result	Remedy
Dented cages	Poorly condensed laps	Fix cages so that sheet of cotton is even and without bunches
Rough cages	Cotton accumulates, weak drafts	Keep cages clean and smooth
Press rolls		
Jerky operation, gears too deep	Uneven laps	Set gears when machine is overhauled
Stripping rolls		
Damaged and dirty flutes	Cotton collects on rolls	Correct these conditions when machines are inspected or overhauled
Worn flutes	Cotton not stripped from screens	
Gears poorly meshed	Uneven laps	
Rolls set unevenly	Uneven laps	
Vertical openers		
Air leaks in doors or pipes	Weak drafts, curly cotton	Make doors and pipes air-tight
Windows in picker doors		
Dirty windows	Have to stop machines when you want to see if cotton is going to the cages evenly	Clean often enough for good observation

Oiling Schedule for Opening and Picking

Bale breaker.....Daily
Apron delivery.....Daily
Horizontal cleaner.....Daily
Hopper feeders.....Daily
Conveyors.....Daily
Condensers.....Daily
Vertical opener
Beater.....Twice daily if oil is used
Every two weeks if grease is used
Lattice opener
Apron shafts, feed roll.....Daily
Beater.....Twice daily if oil is used
Monthly if grease is used

Pickers
Calender rolls.....Daily
Lap racks.....Daily
Stripping roll.....Daily
Cages.....Daily
Gear studs.....Daily
Feed rolls.....Daily
Apron shafts.....Daily
Drive shaft and loose pulleys.....Twice daily
Evener-motion cones, shafts, and gears.....Twice daily
Beaters
and fans.....Twice daily if solid bearing and oil is used
Monthly if ball bearing and grease is used
Friction-motion gears.....Twice weekly
Worm gears.....Weekly if grease is used

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ROLLER BEARING SPINDLES

WITH
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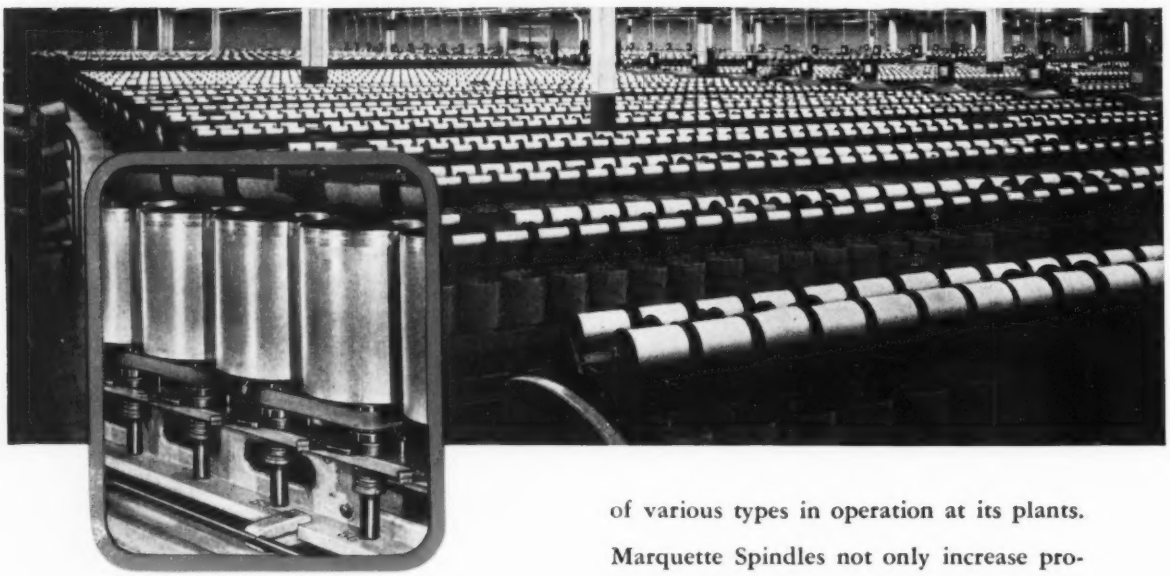
For Cotton, Synthetics, Wool, Worsted



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How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

Your Attitude Can Determine How Employees React to Incentives

▶ Properly installed and administered, incentive plans benefit everybody. They can and should be an asset to the supervisor in carrying out his job. A good supervisor, aware that he's in a position to help himself, his workers, and his company, will do all he can to make his employees accept and like the incentive system.

By M. A. CROSS
Director of Industrial Relations, Dan River Mills, Inc.

RECENTLY ONE OF MY ASSOCIATES was invited to address a group of engineers, standards, and timestudy men on the application of incentives, especially to those indirect operations on which measurement is not often applied. Being a personnel-minded individual, he wanted to get across some of the hazards inherent in any incentive application that is ineptly handled from the viewpoint of its impact on employees. He discussed the subject with me so that we might exchange ideas on some of the sins committed by engineers that had damaged the reputation of incentives. It may not surprise you to learn that we came up with several of them.

But engineers are not alone in the commission of sins in the installation, explanation, and maintenance of incentive rates. Occasionally they have the company of supervisors who, because of their strategic position, can strengthen or undermine employee acceptance of the incentive system. This is a subject worth examination by any supervisor in a mill where work measurement and monetary incentives for above-standard production are a fundamental of the pay structure.

Incentives determine earnings. By their very nature, they represent a highly sensitive nerve leading directly to the pocketbook. This nerve responds instantly to real or imagined injury, sometimes with quite painful results. Consequently, it is a nerve whose health must be zealously guarded by any management personnel, supervisors included, whose decisions or actions can either rub the nerve raw or keep it placid and content.

A supervisor who recognizes that fact will do all he can to get his employees to accept an incentive system and make it work. Here are some things that will help:

1. When a timestudy man comes into your department to measure a job, always tell the employees what is going on. Never confuse them by any statements you make, and if someone asks a direct question, be sure to tell him the objectives of the study. It helps to tell employees about the study before it starts.
2. When a new rate is installed or an existing rate is changed, always inform the employees concerned. Tell them the methods on which the rate is based, the allowances included, and the unit value or price of their production.
3. If something does go wrong and employees do complain about a rate, don't throw all the blame on the standards or timestudy men. Accept your responsibility for seeing that a fair rate is set up and maintained in your department. Be a go-between who works out the differences between your workers and the timestudy and standards men. Remember that both sides have to feel the rate is fair.
4. Try to plan work assignments so that earnings remain at a reasonably consistent level. Avoid violent fluctuations in job possibility and earnings so that employees can figure out about how much money they will make this week, or next.
5. See that a job is studied under normal conditions that apply in day-to-day operations. In that way you can avoid arguments between the worker and the timestudy expert about what normal conditions on the job really are.

Any supervisor who is honest with himself will admit that the points outlined represent an ideal that is seldom lived up to. On occasions, proper concern with the impact of incentives on employees has been sacrificed on the altar of expediency. But a good supervisor has to learn to be more aware of how his own actions and attitude affect his employees' reactions to incentive applications.

Production incentives, soundly installed and administered, benefit everybody—employees, management, customers, owners. They fit into the American concept of reward in proportion to work accomplished. They can and should be an asset to the supervisor in carrying out his task. And incentives, remember, are a delicate instrument that measures the answer to the vital question of how much pay for how much work.

In short, they determine earnings. Because they do, employees will be acutely aware of any inconsistencies, any changes, any misuse of incentives that, in their minds, affect them adversely. It is to your interest to understand and accept this fact and to be guided accordingly in your decisions bearing on application of incentive rates and in your attitudes in discussing problems of incentives with employees.

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Exploring

The Textile Community

An Identified Payroll Traces A Mill's Value to a Community

▶ Eastman Cotton Mills paid its employees with $2 bills that showed local merchants where their trade money came from, how it was spent, and by whom. The result was a new understanding of the mill's importance to the economic life of the town.

By MILDRED BARNWELL ANDREWS

THE LITTLE TOWN OF Eastman, Ga., learned some valuable lessons recently when Eastman Cotton Mills decided to demonstrate what an industry means to a community.

At the suggestion of the local newspaper, the mill cooperated in an identified-payroll scheme to show local merchants where their trade money came from, how it was spent, and by whom. The community project opened the eyes of everyone in Eastman to the value of a good industry and to the community-relations value of the $2-bill payroll.

$2 Bills Chosen for Test

It had been a long time since the mill had paid off in cash. The system of check writing is simpler for the mill, and bookkeeping is easier, with all the different deductions that have to be made and recorded. But for once, anyhow, the mill management was willing to change its method of pay.

At first the plan was to use silver dollars, but the mere matter of weight eliminated that. It was found that the payroll in silver would weigh around 700 pounds and that it would cost at least $200 to transport it from the nearest Federal Reserve Bank to Eastman. And then a man making $60 or $70 a week would hardly want to carry several pounds of silver money around in his pockets until it was all spent.

So the mill and the planners reached a compromise on folding money. Crisp, new $2 bills were obtained for the payroll project. Everyone knew that $2 bills were so scarce in south Georgia that the source of origin would be easily recognized. And a flood of more than 6,000 of them at one time, to be spent as payrolls usually are by the 300 recipients, was sure to make an impression. It did.

Within hours after the payroll was in circulation, remarks from merchants were piling up. The new Piggly-Wiggly store manager was astounded that so much of his cash turnover came from the cotton mill. College Street Pharmacy counted $2 bills in its register until most of the day's intake seemed to be from Eastman Cotton Mills people.

How a Payroll Circulates

Five days later the $2 bills, now becoming worn with many times of changing hands, were still being passed again and again into the merchants' tills. For example: the mill employee with a pay envelope of $50 worth of $2 bills paid an account due at a time-payment furniture store, paid a doctor's bill, and bought a week's supply of groceries.

The doctor, in turn, paid a bill to the local drugstore, bought some gasoline, and gave his wife her housekeeping money.

The time-payment furniture store paid the city its light bill, paid an employee, and bought some office supplies.

The city deposited the $2 bills in the bank in its upkeep account, the furniture store employee made a payment on his car, the doctor's wife met some household expenses, the gasoline station filled its soft-drink dispenser—and so on and on and on the Eastman payroll was recognized as it flowed through the town's daily life.

CONTINUED ON PAGE 174

ONE OF THE $2 BILLS starts on its way through Eastman, Georgia, trade channels as Wilbur Revel, Eastman Cotton Mills employee, makes a purchase from Bartow Parkerson, co-owner of the College Street Pharmacy.

Yarn of Identical Color from 6 Different Beams

. . . because All 6 were Dyed in the Same Bath

You can be positive of securing identical color only when the different beams or packages of yarn are dyed under identical conditions. And identical conditions are certain only when they are dyed in the same bath!

SMITH-DRUM Combination Beam and Package Dyeing Machines are designed to handle from 2 to 6 beams or yarn carriers simultaneously in the same bath and under identical conditions. This means that each beam or yarn carrier is dyed with the same liquor ratio . . . under the same operating conditions of flow, pressure and temperature . . . with uniform distribution of additions to the dye bath.

If you are interested in absolute uniformity of dyeing results, in economy of operation, in saving of floor space . . . let us arrange to have one of our representatives discuss the possible application of this SMITH-DRUM Machine to your operations. A letter, telephone call or wire will receive our prompt attention.

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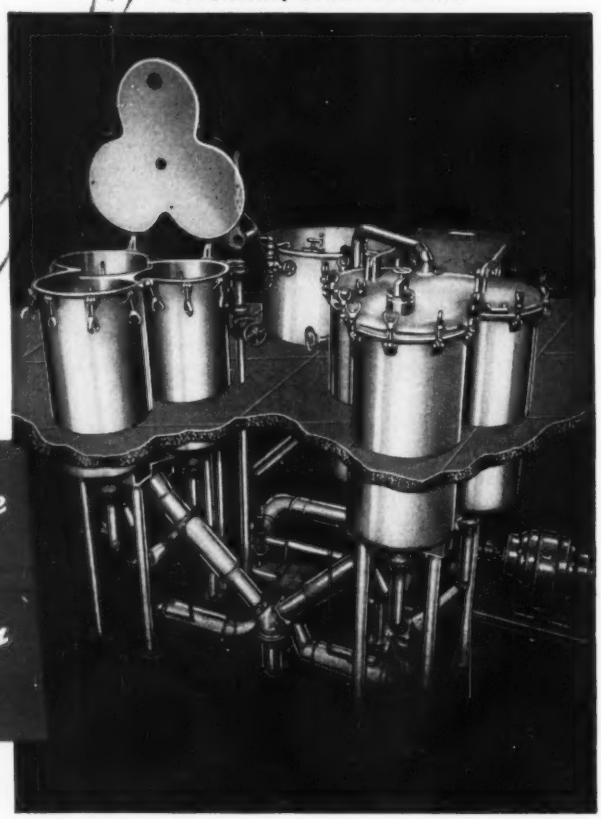
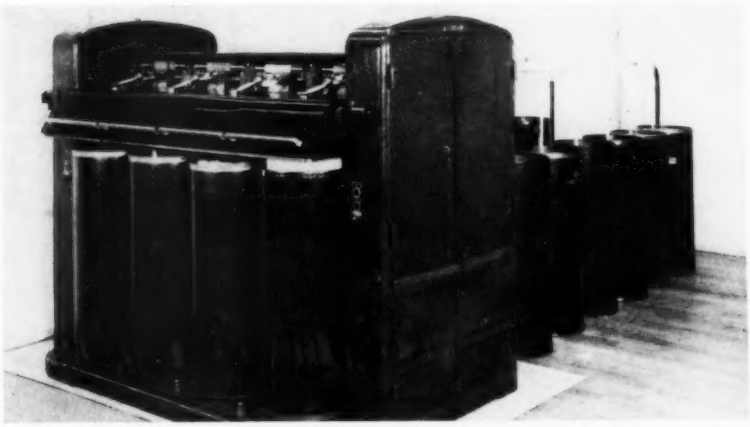


The **SMITH-DRUM** *Machine that Dyes from 2 to 6 Beams or Yarn Carriers in the Same Bath!*

Free copy of Catalog No. PBD-801 will be sent to you on request

TEXTILE Equipment NEWS

Details of Roto-Drafter Released by Whitin



ROTO-DRAFTER has a pin-covered cylinder to do the work of an intersecting gill box or pin drafter. The cylinder can be easily replaced with drawing rolls to do the work of a drawing frame, tentatively called the Roller-Drafter.

A new machine for its American worsted system has been developed by Whitin Machine Works, Whitinsville, Mass. The new machine can work as a pin drafter or gill reducer, or it can be quickly changed to do the work of a drawing frame. It has four deliveries and takes up approximately the same space as a standard drawing frame. Creels are provided for a can or ball package.

When used as a drafting machine, it is called the Roto-Drafter. The essential feature of the Roto-Drafter is a cylinder covered with pins that change their angle to the cylinder as the fibers pass from the delivery rolls to the front rolls. Ball-bearing cams with sealed-in lubrication retract the pins, and the fibers are carried straight off the pins. Wool, synthetic, or blended fibers can be processed in lengths from 2 to 9 ins.

The machine can be quickly converted to a wide-range drawing frame, tentatively named Roller-Drafter, by a mill mechanic in about half an hour. The cylindrical drafting units are removed from the heads and replaced by drawing rolls.

Two deliveries can be run with pins as a Roto-Drafter, and two deliveries on the same frame can be run as a Roller-Drafter.

Also, two deliveries can be run as a breaker section and the other two as an intermediate or finisher section. This applies to both the Roto-Drafter and Roller-Drafter. This feature will enable mills to maintain a balanced production.

When equiped with drawing rolls, the machine will process 1- to 9-in. cotton, synthetic, or blended fibers. The nip of the rolls is adjustable down to a ¾-in. setting.

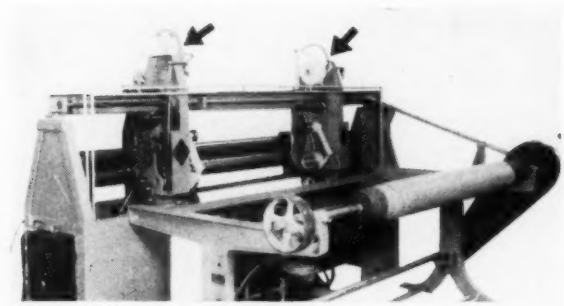
A typical layout for processing 100% nylon tow into medium-number yarn would be to have three processes of the Roller-Drafter, one process of drawing, and one process of spinning.

Starting with four 250-grain ends, an average draft of eight is used with about 240 doublings—4, 6, and then 8 or 10. These three operations should produce a sliver with about a 10% variation on the Uster tester.

The machine will be shown at Atlantic City.

Circle T-1 on Reader-Service Card

Selvage Markers Attach to Finishing Equipment



SELVAGE MARKERS (arrows) can be attached to operate automatically on almost any finishing equipment. Selvage is marked at up to 45 yds. per min.

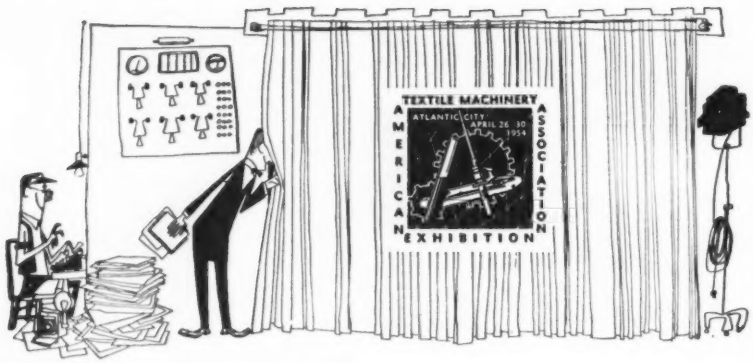
An automatic selvage-marking attachment for finishing equipment has been developed by Kaumagraph Co., Wilmington 99, Del.

The machine automatically applies Kaumagraph transfers to either one or two selvage edges at speeds up to 45 yds. per min. Single or multicolor marks, of any reasonable design, are affixed in one operation. Marks can be made concurrently or alternately on the two selvages. Accurate controls permit operating variations to be maintained within a tolerance of ⅛ in. on the selvage.

A separate operator is not required. If the problem is backmarking, the same basic unit can easily handle this requirement.

The machine will be on display at Atlantic City.

Circle T-2 on Reader-Service Card



TW has been peeking . . .

behind the curtain of the April Textile Exhibition

Here's what we saw that you might be looking forward to:

Single-Apron Wool Dryer

C. G. Sargent's Sons Corp. will exhibit a new single-apron dryer. The dryer can be used as a high-production stock dryer or a back-wash dryer for sliver or top. Capacity is 48 3-oz. ends at 15 ft. per min. or better than 700 lbs. per hr. of card sliver.

Tenter-Frame Overfeed

Marshall & Williams Corp. will have in operation a high-speed tenter frame equipped with an overfeeding device and a new No. 20 tenter clip to accommodate the overfeeding.

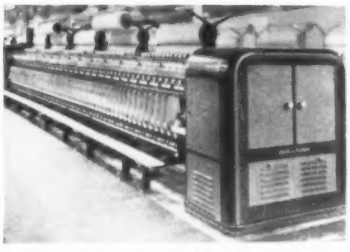
Warping, Winding, and Tying In

Barber-Colman will show four new pieces of equipment: a large-package spooler that makes up to a 6-lb. cheese, a high-speed warper with a 40-in. head that runs up to 1,000 yds. per min., a large-package warper creel that handles 6-lb. or standard packages, and a warp-tying machine that ties a complete warp in a single load.

New Dye Jig

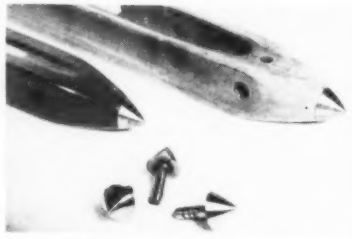
Werner Machine Co., Inc., will demonstrate its finishing equipment. A feature will be its new Model 36 dye jig, which has a constant linear speed combined with air-operated beam-roll brakes. Thirty-six-inch rolls can easily be handled. It is engineered for corduroy, cotton duck, and all heavy fabrics.

Improved Spinning Frame



WOOL SPINNING FRAME will be in operation at the Davis & Furber booth producing yarn from roving made on the D&F 84-in. card. (Information will be available on the wide card.) The frame will have 144 spindles, with 5-in. ring and 6½-in. gauge. Paper tubes will be used. Substantial improvements have been made since the frame was shown at Atlantic City in 1950.

Long-Lasting Shuttle Tips



STEEL SHUTTLE TIPS that are practically indestructible will be shown for the first time by Standard Pressed Steel Co. The tips have cold-formed "continuous internal flow lines" that keep them from failing in the shank area under the main body of the piece.

Draper Loom Improvements

Draper Corp. will feature the versatility of its looms. Three looms on exhibition will have the arches eliminated. One loom will be set up to demonstrate automatic lubrication to 25 or 30 points, and a loom will be completely equipped with ball bearings.

A cotton loom will have major changes in the take-up and wind-up. On the wind-up, the worm crank, racks, and gears have been eliminated. New bevel gears on the take-up will be running in oil in an encased housing. The take-up roll can be adjusted to be easily and cheaply changed from high roll to nutting bar; the filling motion can be easily changed from center to side fork.

Conditioner

The latest type of H-W conditioner will be on exhibition. The Industrial Dryer Corp. announced it will be arranged to automatically preheat, condition, and exhaust at the end of the operating period.

Power Equipment

Century Electric Co. will show its newly designed fractional-horsepower motor and integral-horsepower motor. Operator panels will allow visitors to actually operate selective-speed drive units.

Watch this page next month for more peeks at the equipment to be shown at the American Textile Machinery Exhibition in Atlantic City April 26-30.

News

ABOUT THE SHOW

$10-Million Exhibit

About $10-million worth of machinery, equipment, and supplies will be on exhibit at the show. Exhibitors have taken 122 more spaces than in the 1950 show, and this year's exhibit will be about one-third larger than the one in 1950.

Top Service Men on Hand

Exhibitors of machinery and equipment will have their top service men available for consultation on mill problems. Hopes are that superintendents, overseers, engineers, and master mechanics will come to Atlantic City, not only to see what's new but also to discuss any problems they may have with present machinery and equipment.

No Cameras Without Permits

A new exhibition rule will be in effect this year. Taking pictures will be allowed only if you have a permit from the exhibition authorities. It is reported, however, that permits will be issued quickly and generously.

Hotel Rooms Available

There are 27,000 commercial hotel rooms available in Atlantic City.

To reserve hotel accommodations, write—

The Housing Bureau
16 Central Pier
Atlantic City, N. J.

More Loom From C&K

Crompton & Knowles Loom Works, Worcester, Mass., will show:

1. A new narrow-fabric loom weaving zipper tape.
2. An entirely new W-3A loom equipped with a Select-A-Pic mechanism with which many pick-and-pick weaves may be woven automatically.
3. One of C&K's latest jacquard looms.
4. Five new looms never shown before. These are:
   a. One loom weaving a gray-flannel filling mix
   b. Another loom for the automatic weaving of a denim
   c. Another "first"—a loom that can automatically weave 4x1 filament dress goods
   d. A loom developed for 4x1 spun-rayon blends
   e. A 2x1 loom weaving upholstery fabrics

It is planned to build these new looms with a single-color rotary magazine, but they also may be equipped for two- and four-color work. They can be equipped with undercam harness motions, end-cam harness motions, dobbies, head motions, and jacquards.

All the new looms will be equipped with new let-offs, although any of the present let-offs may be applied to them. All the new looms may be equipped with any kind of conventional take-ups.

CONTINUED ON PAGE 140

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NEOZYME® Special

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Manufacturers of Chemicals for the Textile Industry

8398

PEEKS (*Continued*)

Twisting From 12-In. Pirn

TWO NEW ACCESSORIES for the Unirail uptwister will be in operation at Atlantic City, according to Universal Winding Co. The uptwister will be twisting nylon from 12-in. pirns. With the calibrated dial on the tension device, all tensions can be quickly set after the first one has been set with a tensometer. The new yarn cleaner is just below the twister technician's thumb.

Improved Fletcher Equipment

Fletcher Works will have on display its newest high-speed semiautomatic narrow-fabric loom with new improvements. A new high-speed winder will be shown, plus an extractor using removable baskets, which are used to dye raw stock and skeins.

Teflon-Coated Parts

General Plastics Corp. will exhibit textile-machinery parts that have been coated with Teflon.

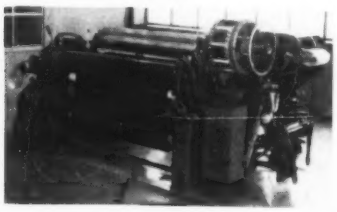
Synthetic-Yarn Bobbins

Spaulding Fibre Co. will show its new bobbin constructed of a laminated-plastic material combined with aluminum tubing. The bobbin has a snag-free finish and is dynamically balanced. It will take care of all synthetic yarns.

Spinning-Frame Accessories

SKF Industries, Inc., will show new and improved antifriction-bearing spinning-frame accessories. Features will be a new pendulum weighing arm that permits individual guidance of top rolls and insures parallel tracking with bottom steel rolls, a new grease-lubricated ball-bearing top roll designed to prevent oil-stained yarns, and a tiltproof tape-tension pulley.

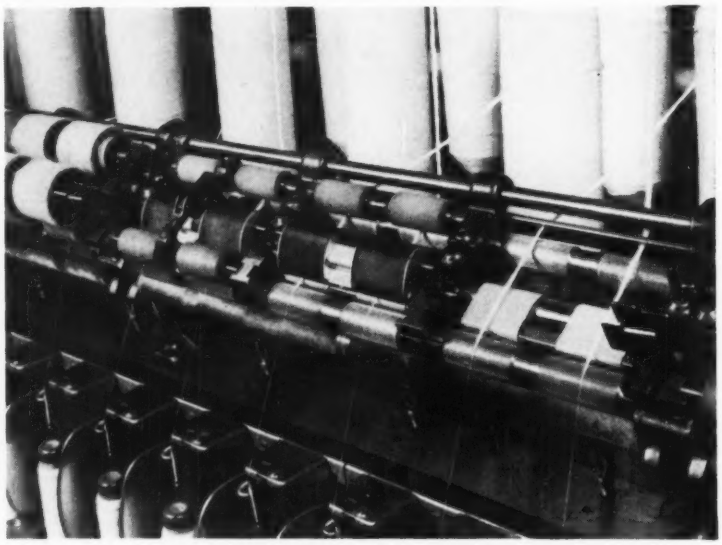
Streamlined Loom



FOUR-SHUTTLE AUTOMATIC LOOM for fine rayon and nylon weaving will be on display by Societe' Anonyme Adolphe Saurer. The streamlined loom has drop boxes on one side and the underslung Saurer dobby on the other. Effective width is 51 ins.; speed is 155 ppm.

TEXTILE *Equipment* NEWS

Duo-Roth Change-Over Increases Roth Draft by 50%



DUO-ROTH DRAFTING ASSEMBLY replaces the middle-top and control rolls on the single-belt Roth system. Synthetic top aprons, an adjustable cage assembly, and needle-bearing middle-top rolls have to be installed, and leather bottom aprons and Shaw drafting gears are strongly recommended.

The draft on Roth spinning frames can be increased over 50% by converting to a new Duo-Roth double-apron system that Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass., has developed; the new drafting unit replaces the middle-top and control rolls. A change-over consists of an adjustable cage with spacers, synthetic top aprons, and a Torrington needle-bearing middle-top roll. Leather bottom aprons are recommended for the Duo-Roth system; so a change-over would include leather bottom aprons on frames now equipped with synthetic bottom aprons.

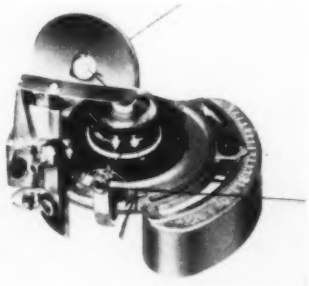
Cage assemblies for frames spinning cotton are currently in production; cage assemblies with wider settings for synthetics will not be available for some time. With cotton frames already equipped with the Roth system and leather bottom aprons, the Duo-Roth change can be made without breaking down the ends. The Duo-Roth system can be applied to almost any make of spinning frame.

To get the 50% increase in draft, it is necessary to convert to the Shaw drafting gear train. This gearing also is better suited to take the extra strain from the increased top-roll pressure and apron drag. The Shaw draft gearing provides a variable break draft, and it allows a wide range of drafts with 30- to 60-tooth draft gears and high draft constants.

Two mill tests showed these results:

- With a 50% increase in draft, one mill extended the top-roll cleaning period from 24 to 48 hrs.
- Keeping the same draft, a mill increased its 40s breaking strength by 5 lbs. with better yarn appearance. Ends down were noticeably reduced.

Circle T-3 on Reader-Service Card



New Kidde Stop Motion Is Specifically for Warpers

WARPER STOP MOTION, designed to be used with the Kidde Warp Compensator, has been introduced by Walter Kidde & Co., Inc., Belleville 9, N. J. If the yarn breaks or if tension increases or decreases beyond the set limits, the compensator arm makes the stop-motion wire rise, which throws a switch that cuts off the driving power. Regular delivery on the stop motion is expected to begin in April.

Circle T-4 on Reader-Service Card

JACOBS

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- **UNIFORMITY**
  PROVIDES UNVARYING PICK ACTION
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  CONSTRUCTION GIVES EXTRA STRENGTH
- **EXTRA-DURABLE**
  PLUG OR HEEL REDUCES ADJUSTMENTS
- **MOLDED AS ONE PIECE**
  ENTIRELY, INCLUDING PLUG
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  OR PARTS TO WORK LOOSE
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More uniform
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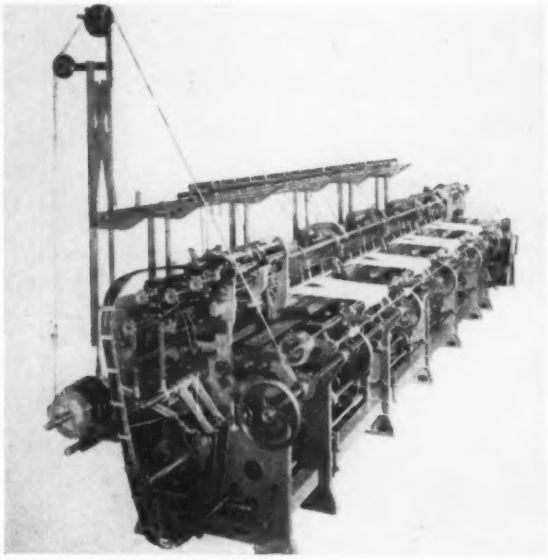
For more information, write direct or use Reader Service post card.

High-Speed F.-F. Sweater Machine Developed by Reiner



FULL-FASHIONED SWEATER MACHINE runs at 60 courses per minute. It is built in four-head units so that sweater backs, fronts, and sleeves can be made simultaneously with 12 heads.

A prototype of a new full-fashioned sweater machine has been built by Robert Reiner, Inc., Weehawken, N. J., and new machines will be ready for mill installations by summer. Features of the machine, delivered completely assembled:

High Speed: The prototype machine is knitting 2/30 Orlon yarn at 60 courses per minute. This speed is adjustable to the type of yarn and the tightness of the stitch.

V-Neck Attachment: A fully automatic V-neck mechanism on the full-fashioned machine controls two carriers and the narrowing spindles.

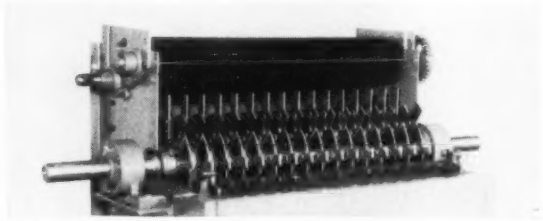
Fashioning: Four 12-point narrowing fingers are actuated by narrowing spindle controlled by the pattern chain. Each section has four yarn carriers (two more can be added), which are frictionally locked when in action and automatically stopped during the fashioning operation. A safety device stops the machine in case of overriding.

Four-Head Units: With four-head machines, sections can be set up on different work, sizes, and styles. With 12 heads, one four-head machine can be running sweater fronts, another backs, and the other sleeves. So no chain changes are necessary, and during downtime, only four heads are out of production. Body sections are 28 ins. wide, sleeves sections 32 ins.

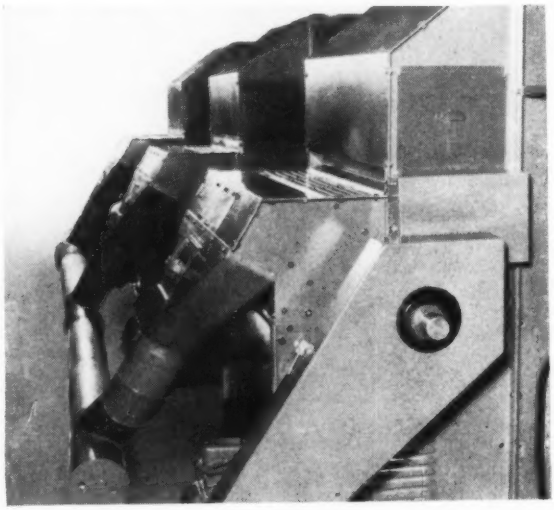
Other features: The machine will be available in 18-, 21-, and 24-gauge standard models, but other gauges will be produced on request. Needles are held in place by a needle clamp located every two inches. Tension is controlled by weights on the wear roll, and the split control cams can be easily removed. Friction units operate in an oil bath.

Circle T-5 on Reader-Service Card

New S.-L. Opener Increases Cleaning of Opening Line



BUCKLEY BEATER has 136 picks of hardened steel. Over 75% of the beater is enclosed by the grid bars.



NO. 15 OPENER becomes an integral part of the F-7 feeder to increase the cleaning efficiency of the Saco-Lowell opening line.

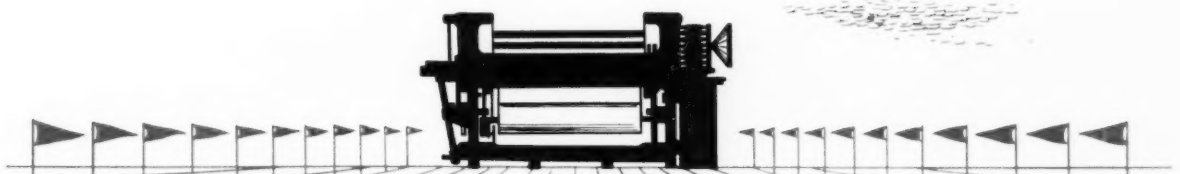
A new cotton cleaner, No. 15, has been developed by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass., for increasing the cleaning action of its F-7 cleaning and blending feeder. The new cleaner is installed directly in front of the F-7 unit and becomes an integral part of it.

The working element in the new cleaner is a 16-in. Buckley beater with 136 hardened-steel picks. The beater assembly is mounted on antifriction bearings. Sixteen grid bars enclose over 75% of the beater circumference. These bars are adjustable in sets of three, with two adjustable cheeks to each set.

Stock is fed directly from the F-7 doffer to wooden feed rolls on the No. 15 cleaner. After passing through the beater section, the stock is carried by high-velocity air currents to the main trunk leading to a No. 11 condenser. Dust and fine lint is drawn into an air filter that filters the condenser exhaust, and the stock blends better in the air stream than on a feed table.

The No. 15 opener is said to be effective in removing grasses, sticks, and large leaf particles. It was designed to meet the cleaning requirements of machine-picked cotton. In a test on a typical opening line (three F-7 feeders, a vertical opener, and first and second No. 12 openers), droppings were increased 30.9% by installing No. 15 openers after the F-7 feeders.

Circle T-6 on Reader-Service Card



Silhouette of Progress

You'll find the facts in Atlantic City– April 26-30

TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION
ATLANTIC CITY APRIL 26-30 1954

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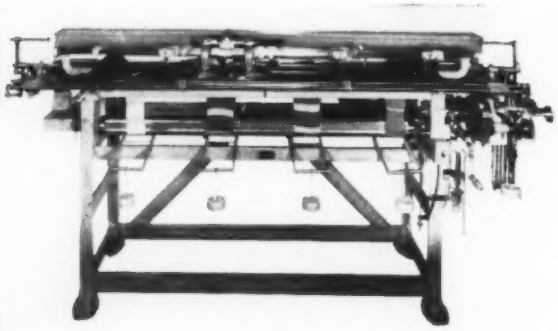
DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA. | GREENSBORO, N.C. | SPARTANBURG, S.C.

Flat Knitter Makes Sweater Collars and Cuffs



FLAT KNITTING MACHINE for sweater parts has a single-lock carriage that can be controlled at either end of the machine.

An automatic flat knitting machine for making collars, cuffs, and trim for full-fashioned and regular sweaters has been introduced by Queens Machine Co., 280 Star St., Brooklyn, N. Y. The machine is also capable of producing a full garment section with knit-on cuffs or tails. It can make a scalloped collar followed by block designs and a regular cuff stitch. Four bars allow various colors to be included in the design.

High- and low-butt needles are on both needle beds. Four stitch settings can be made at each end of the machine. The number of tuck courses is limited only by the capacity of the needle hook.

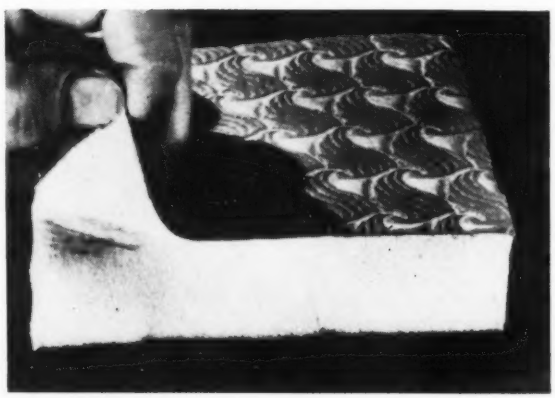
The drop cardigan locks can be automatically put in knit, tuck, or inactive positions. Another drop lock controls the jacks. This lock can be automatically put in a knit or inactive position. All carriage movements can be controlled from either end of the machine.

The ball-bearing single-lock carriage is driven from a slide box and chain. Advantages of single-lock knitting: cotton raveling is easy; it's easy to get a tight, straight selvage; and there is reduced danger of producing streaks in cashmere or fine-wool goods in pulling yarn from the same cone.

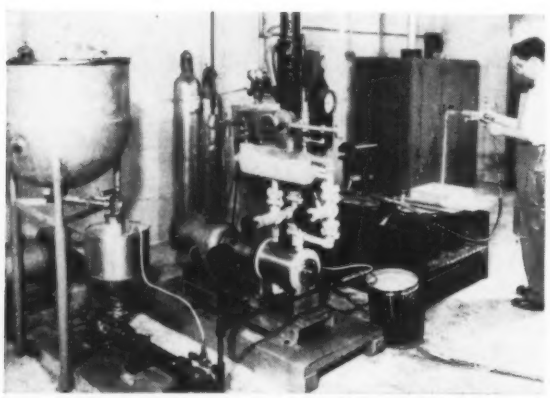
Circle T-7 on Reader-Service Card

Foam-Backed Fabric Is Made In Molds or Continuous Sheet

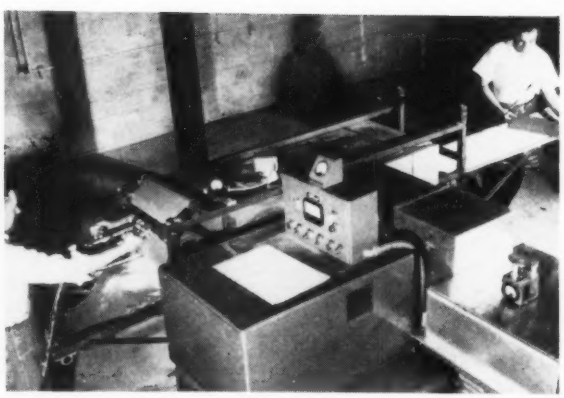
A continuous-process system for producing foam-backed fabrics is being licensed by Elastomer Chemical Corp., 212 Wright St., Newark 5, N. J. The soft foam is produced continuously and cured directly onto natural or synthetic textiles.



FOAM-BACKED FABRIC has a soft, resilient cushion. The foam is practically odorless and resistant to oxidation and hardening. This block was cast and cured in a cardboard mold.



FOAMING is produced at 150 to 350 lbs. per hr. by this equipment; larger units produce up to 1,000 lbs. per hr. Plastisol, based on Bakelite vinyl resins, is mixed with a gas to produce foam.



THIS CONVEYOR with dielectric oven 30 ft. long cures ¼x14-in. foam sheeting and molds it directly to a fabric at 3 ft. per min. The Plastisol cures at 250° F. Equipment with a larger capacity can be made.

Circle T-8 on Reader-Service Card

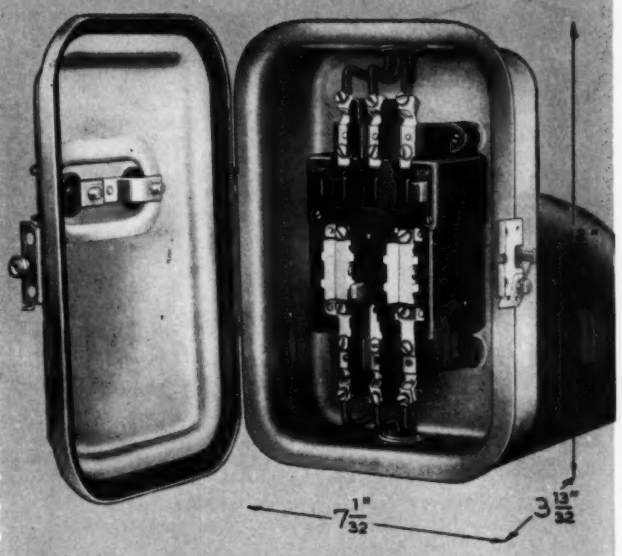
ALL NEW

and designed *specifically* for the

TEXTILE INDUSTRY

THE ARROW AH HART TYPE "LM"

LOOM SWITCH



SIZE 0—3 POLE—2 HP To 600 VOLTS A-C

Here for the first time is a manual, across-the-line Starting Switch designed and built *specifically* for the Textile Industry. Completely new and radically different throughout, the Arrow-Hart Type "LM" employs a distinctive, built-for-the-purpose switch mechanism housed in a specially engineered, lint proof enclosure . . . it is NOT just an adaptation of a standard switch with a "face lifting." As a result the Type "LM" assures new standards of performance, dependability and safety on single or multiple spindle looms.

Outstanding Features..

- UNIQUE ROTARY TYPE MECHANISM RESISTS SHOCK . . . far in excess of any found in actual installations.
- LINT PROOF ENCLOSURE . . . with efficient, balloon type neoprene impression gasket. No knockouts or mounting holes to admit lint. Self-locking latches hold cover tightly even though screws aren't tightened.
- MUCH SMALLER SIZE, GREATER COMPACTNESS . . . saving valuable space.
- FULLY ENCLOSED MECHANISM . . . for extra safety, double protection against lint.
- PUSH BUTTON OPERATION . . . the *preferred* control throughout industry. Buttons are lint proof, electrically insulated.
- STRAIGHT-THRU WIRING . . . is faster, easier to install, no need for looping or U-bending.
- SAFER RE-SET MECHANISM . . . with lever *inside* lockable enclosure restricts re-starting to qualified personnel. Mechanical interlock prevents re-setting unless the Switch is "Off."
- SWITCH EASILY REMOVED FROM ENCLOSURE . . . without disturbing wiring. All wiring is brought to terminal blocks; switch is secured to these by 6 screws.
- UNDERWRITERS' APPROVED FOR SINGLE AND GROUP FUSED INSTALLATIONS!

SEND FOR COMPLETE INFORMATION . . . write for your copy of the new A-H Loom Switch Folder.

ON DISPLAY at the AMERICAN TEXTILE MACHINERY EXHIBITION Atlantic City, N.J. — April 26 thru May 1, 1954 Booths Nos. 868-869

ARROW AH HART

INDUSTRIAL CONTROL DIVISION

The ARROW-HART & HEGEMAN ELECTRIC Co.

103 HAWTHORN STREET, HARTFORD 6, CONN.

Please send me my new Loom Switch Folder.

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CO. NAME _____

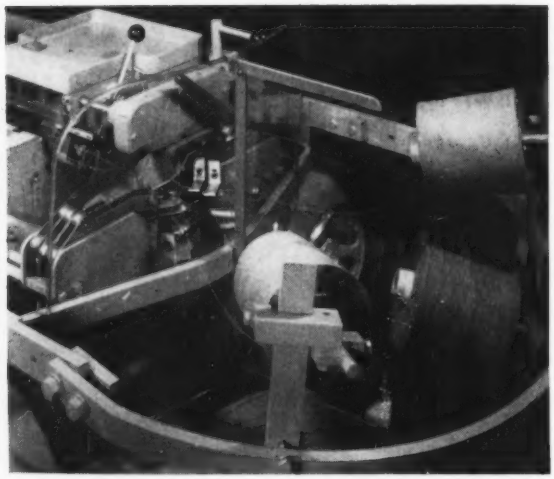
POSITION _____

ADDRESS _____

CITY _____ ZONE ____ STATE TW-3

A Complete Line of ADVANCED DESIGN Motor Controls for the Textile Industry.

Filling Mixer Developed for W & S Sulzer Loom



FILLING-MIXING UNIT works from two packages and a vertical motion that alternates the feed between the two packages. A pick-back mechanism is attached.

A filling-mixing unit for its Sulzer weaving machine has been brought out by Warner & Swasey Co., 5701 Carnegie Ave., Cleveland, Ohio. The unit will blend alternate single strands of yarn at approximately 240 ppm. It is available on new machines and can be added to all machines already in operation.

This new unit uses two yarn packages and takes one pick at a time from each package; the feeder that holds the yarn and feeds it to the active shuttle has been changed from a single to a double unit. Two feeder-gripper springs are mounted on a single plate, one above the other. In addition to the normal horizontal motion of the feeder, a vertical motion brings the top feeder into position and then the bottom feeder.

Single-strand blending eliminates filling bars, and it provides broader possibilities in two-color blending.

A pick-back attachment reverses the harness motion and take-up motion. If the yarn breaks, the operator presses a lever and the machine automatically moves back to where it was when the yarn broke. Operator time is saved and the possibilities of error are eliminated.

Circle T-9 on Reader-Service Card

Radiant-Heat Panels Have Textile Applications

INFRARED-HEAT PANEL operates at 700° F. Typical textile applications are heat setting, singeing, curing, and permanent calendering and embossing.

Heavy-duty infrared generator for high-intensity heating has been announced by Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh, Pa. The generators are made in 66x12-ft. panels.

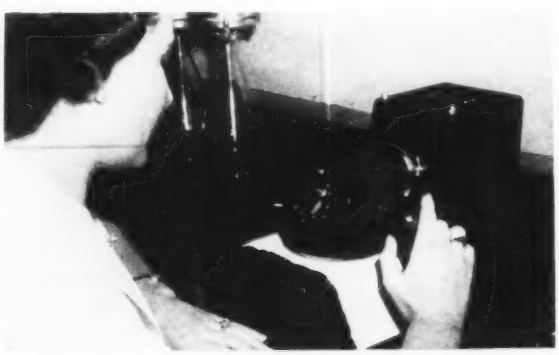
Infrared radiation at its higher intensity, 2.7 kws. per sq. ft. in the standard model, is distributed with uniformity. Output is controlled from 4% to 100% of 15 kw. capacity, with element temperature up to 1,450° F. Standard voltages: 240 and 480.

The panels are easily mounted on simple angle-iron supports. No fans or cooling equipment are required; the panel operates at 700° F. on the work.

With the panels, a thread-finishing mill is heat setting 3,000-yds.-per-lb. nylon at 42 yds. per min. Uniform heating sets the yarn at 15 to 16% elongation with over 9 lbs. breaking strength.

Textile applications are: heat stretching and setting; tenter preheating; hot flue preheating; singeing; curing resin finishes; preheating and heating in dyeing Dacron with vat acid; and permanent calendering and embossing.

Circle T-10 on Reader-Service Card

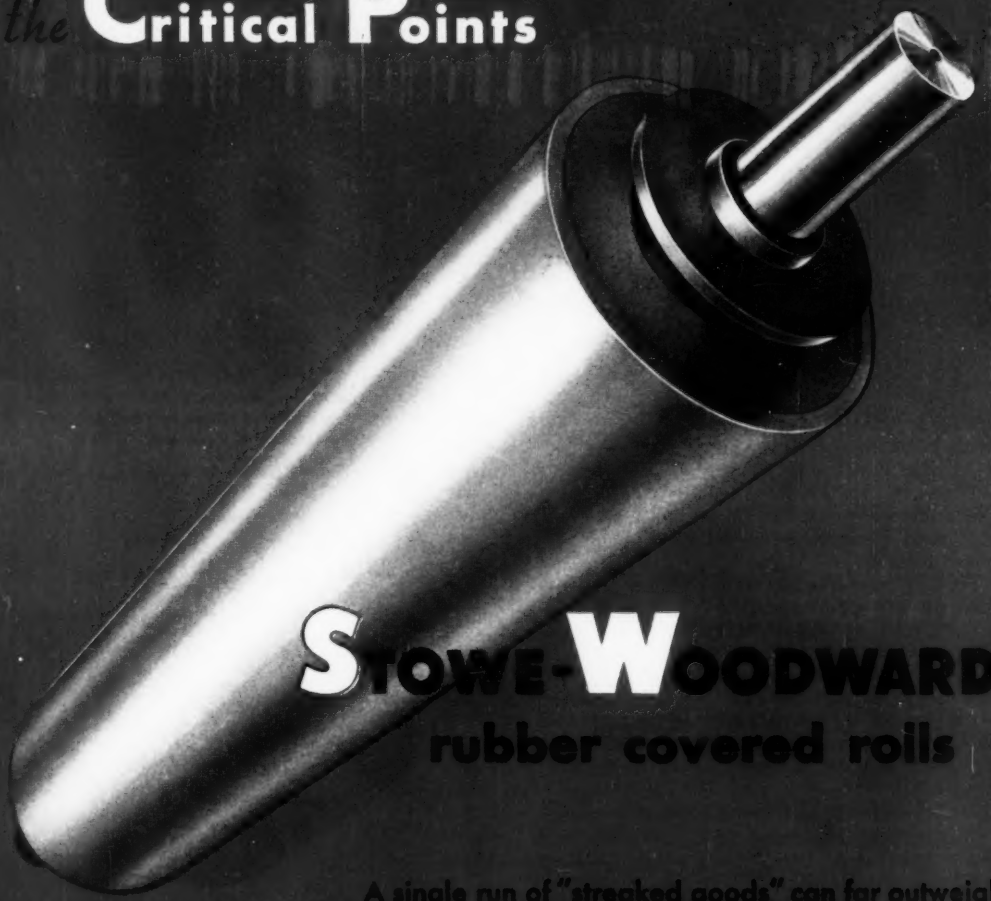


Tester Measures Textiles Too Porous for Densometer

NEW-MODEL PERMEOMETER, made by W. & L. E. Gurley, Industrial Div., Troy, N. Y., measures the porosity of textiles at a pressure drop equal to 0.5 in. of water. It checks filter cloth, gives an indication of coolness or warmth, predicts the penetration of coatings and the water resistance of fabrics, and measures the compactness of cloth after fulling, washing, sizing, or other treatment. Routine tests are made in less than 15 secs.

Circle T-11 on Reader-Service Card

for **Quality Control**
at the **Critical Points**



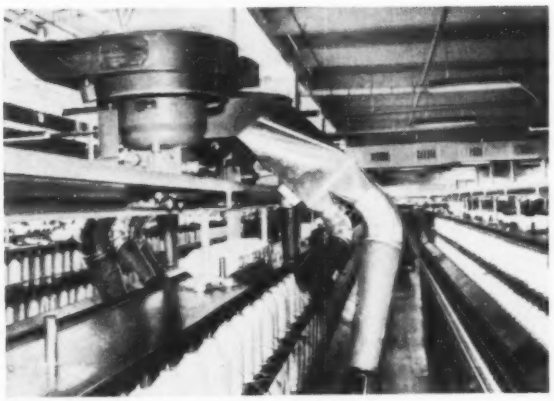
STOWE-WOODWARD
rubber covered rolls

A single run of "streaked goods" can far outweigh the cost of Stowe-Woodward rubber covered rolls whose uniform extraction prevents the damage.

STOWE-WOODWARD, Inc.
Craftsmen in rubber rolls

NEWTON UPPER FALLS 64, MASSACHUSETTS

New Traveling Cleaner Has Greater Cleaning Capacity



TRAVELING CLEANER on spinning frame is coupled to an air distributor with 12 separate air currents. The velocity of air from each outlet is separately controlled.

Frame-mounted traveling cleaners, Type CTF-5, have been announced for general distribution by Parks-Cramer Co., Fitchburg, Mass. The cleaners have been under development and in limited mill use for several years. They are said to have increased cleaning capacity and to clean areas previously inaccessible to traveling cleaners. Since the same track is used, the new cleaners can replace older models.

The cleaners can be coupled with different air distributors for use on conventional or large-package spinning frames, with or without umbrella creels, and on winders, twisters, and other yarn-processing machines.

In the illustration, the air distributor (Style 137) has a total of 12 separate air currents, as compared to six currents in the former standard models. Each outlet is separately adjustable for velocity, and most are adjustable for direction. Air currents can be "spotted" to do a particular job—high velocities for spindle and ring rails, thread boards, weight hooks, and back guides, and low velocities for creels, stored roving, and the track. Outlets below head-height have flexible cuffs of soft impregnated fabric.

Circle T-12 on Reader-Service Card

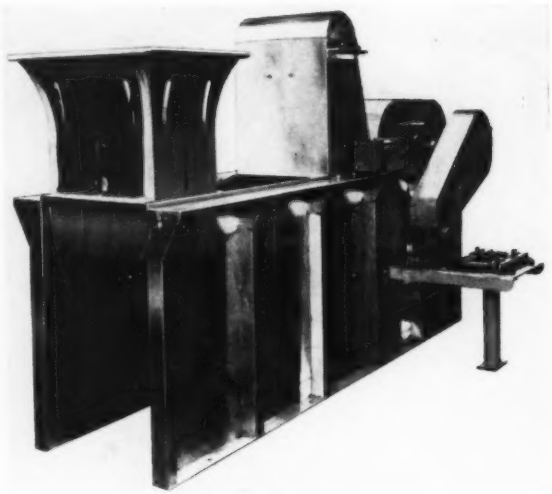
Worsted Short System Features Autoleveller

The short system of worsted drawing developed by Prince-Smith & Stells Ltd., Keighley, Yorkshire, England, is based on the Raper Autoleveller, which "feels" the weight variation of the sliver inch by inch and neutralizes the variation by continuously varying the draft.

For yarn numbers up to 24s (English system), only three drawing processes are required: an intersecting gill box and a draw box fitted with the Autoleveller, and a standard English-system dandy reducer. For finer numbers, a dandy roving frame is added.

Circle T-13 on Reader-Service Card

Saturator Improved To Prevent Tangles



IMPROVED 10-FT. ROPE SATURATOR has an elevated roll that, along with internal changes, is said to eliminate tangles and damaged fabrics. The machine is manufactured by Cook-P & N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass.

Circle T-14 on Reader-Service Card

Electronic Tester Tests Moisture in Wool Package

WOOL-YARN MOISTURE TESTER is an electronic instrument that checks the distribution of moisture inside the surface of a closely packed package of yarn. The package is pushed down on the spikes and the calibrated dial "tunes in" the moisture. Shaw Electronics Ltd., 31 Market St., Bradford, Yorkshire, England, makes the instrument.

Circle T-15 on Reader-Service Card

TEXTILE *Equipment* NEWS

Announcing the POWRWORKER "26"

Feature by feature, it's engineered to meet your own handling requirements

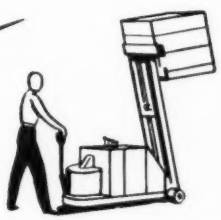
Detailed job-studies in customer plants, warehouses and terminals dictated the features of the POWRWORKER "26". No truck on the market today can match the POWRWORKER'S combination of *user-benefits*.

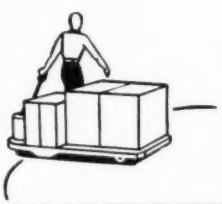
- **Maximum Maneuverability**—Only 26" longer than the load, the shortest standard truck on the market.
- **Light Weight**—Completely fabricated construction combines maximum strength with least weight.
- **Stability**—Close-to-the-floor, low center of gravity.
- **Great Efficiency**—Double reduction of spur gears gives maximum ton-miles at least power cost.
- **Balanced Load Distribution**—Double lift cylinders for smooth lifting and lowering.
- **Safety**—Deadman switch cuts power when brake is applied, handle automatically returns to brake-position.
- **Easy to Service**—All operating units accessible without lifting or dismantling. Drive wheel tire is quickly demountable.

Pallet: 4000, 6000 lbs. cap.

Platform: 4000, 6000 lbs. cap.

Stacker: 1500, 2000, 2500, 3000 lbs cap.





We invite you to compare the 1954 POWRWORKER with any truck on the market! For details, call your local Clark dealer, listed in the Yellow Pages. Or send the coupon for literature.

Ask your Clark dealer about Clark's low-cost Pay-As-You-Go leasing plan.

CLARK EQUIPMENT

POWRWORKER SECTION
Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 27, Michigan

☐ Please send POWRWORKER literature. ☐ Have representative call.

Name_____

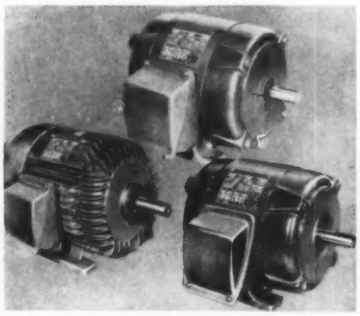
Firm Name_____

Street_____

City_____ Zone_____ State_____

When Cotton Was a Smuggler's Prize...

Westinghouse Announces New Induction Motors



NEW MOTORS conform to the latest NEMA standards and are available in 1 to 30 hp. in totally enclosed fan-cooled (left), totally enclosed nonventilated (center), and drip-proof (right) models.

A new induction motor designed for longer motor life, greater flexibility, and higher reliability, as well as decreased size, has been announced by Westinghouse Electric Corp., Pittsburgh 30, Pa.

The Life Line-A has improved ventilation, better insulation, and a more efficient and better-protected bearing and is quieter and smaller per horsepower. It conforms to the new NEMA standard dimensions. It is available in three enclosures: totally enclosed fan cooled, totally enclosed nonventilated, and dripproof, from 1 to 30 hp.

Wire, oil, dip, and cable insulations are all new. Frames are made of cast iron.

One old motor made as much noise as two of the new motors.

Circle T-16 on Reader-Service Card

English Bobbin Stripper Strips With Compressed Air

The pirn- and bobbin-stripping machine developed by the British Rayon Research Association is being manufactured by Farnsworth Engineering Co. Ltd., Emlyn St., Bolton, Lancashire, England. The machine operates with compressed air. A rotating creel carries each bobbin past an air nozzle, and the loose end on the bobbin is blown into a funnel, which sucks the end into a collecting bag.

The machine was designed for continuous-filament rayon; but if it is used on roving bobbins, the roving will be delivered opened with the twist removed.

Circle T-17 on Reader-Service Card

F.-F. Garment Machine Knits at 65 Courses Per Minute

A full-fashioned underwear and outerwear knitting machine has been brought out by William Cotton Ltd., Leicester, England. The knitting machine is said to run at 65 courses per minute. Controls are centralized.

V-necks are formed at the same time as the armholes by a duplication of the carrier drive. The machine will draw from full width down to 2¼ ins.

CONTINUED ON PAGE 220

NEW *Dyes* AND *Chemicals*

New Resin Cakes Less At High Temperatures

A new resin made by the Textile Resin Dept., American Cyanamid Co., New York, N. Y., Aerotex Resin UM Special, is said to have greater solubility and pad-bath stability in addition to less caking tendency in containers at high temperatures. The product is said to produce a durable wrinkle resistance and give shrinkage control on cellulosic fabric. It is especially well adapted for use in glazed chintz and embossing formulas where maximum durability is desired.

Circle D-1 on Reader-Service Card

New Scouring Agent Has Solvent Action

A new scouring agent, said to contain cresols and other solvents along with selected detergents, has been put on the market by Richmond Oil, Soap, & Chemical Co., Inc., Philadelphia, Pa. Scourclean X is said to have good stability to hard water, acids and alkalis.

Circle D-2 on Reader-Service Card

New Liquid Resin Has Good Wash Durability

A new liquid resin, called Rhonite R-2, has been developed by Rohm & Haas, Philadelphia, Pa. Possessing stability to normal storage temperatures and stability in solution, the resin thus eliminates two common finishing problems. The makers recommend the product for dimensional stabilization of rayons, embossing of cotton, crisp finishes on nylon and silk, and many other finishes.

Circle D-3 on Reader-Service Card

New Orange Salt Has Good Solubility

A new Orange R F Salt is the latest addition to the line of diazonium salts offered by National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y. The new salt produces various shades of orange, yellow, scarlet, and brown when coupled with the appropriate naphthol. Good to excellent fastness to light, washing, and alkalis are claimed by the maker.

Circle D-4 on Reader-Service Card

New Organic Sequestrants Offer Advantages

A new development in organic sequestrants has been tested on a production scale by Refined Products Corp., Lyndhurst, N. J. These new compounds, known as Perma Kleers, are stable salts of polyamino carboxylic acids. Excellent solubility, superior chelation of ferric ions, and greater efficiency for sequestering calcium and divalent metals are claimed by the makers.

Circle D-5 on Reader-Service Card

New Chemical Has Experimental Promise

Biuret, $H_2NCONHCONH_2$, is a new experimental product of Nitrogen Div., Allied Chemical & Dye Corp., New York, N. Y., similar to urea. The product can be used in applications where urea or melamine are now used. It is not intended as a replacement for these products but is a new material which will supplement them in uses where its properties prove valuable. The product has possibilities in resins for adhesives, textile treating, dyes, and specialty products. Much of the interest expressed to date on the industrial uses of biuret has centered on its resin-forming properties.

Circle D-6 on Reader-Service Card

Resin Has Resistance To Yellowing

A new modified-urea thermosetting resin, Resloom E-50, made by Monsanto Chemical Co., St. Louis, Mo., has successfully demonstrated its use for white and white-background applications. Soft hand, good shrinkage control, ironability, and crease resistance are contributed to the fabric as well, the company claims. Other advantages imparted are: no build-up on texturizing equipment, durability of finish to alkaline wash, compatability with common hand modifiers, and excellent storage life and bath stability.

Circle D-7 on Reader-Service Card

THIS IS NO. 103 OF A SERIES ON

When Cotton Was a Smuggler's Prize...

Few Realized It Would One Day Be a Staple Fabric of Nations!

Outlawed because manufacturers of silks, velvets and tapestries declared the popular new fabric would ruin them—for nearly 100 years cotton cloth was prohibited in France. Yet the fashion-conscious French women defied laws and danger to wear the precious contraband.

Often their cotton frocks were ripped from them in the streets as government agents tried in vain to enforce the Edict of 1686. Fines, penalties and violence could not stem the demand for the new printed and dyed cottons, however. Secret warehouses were set up; and cotton became the highly prized cargo of smugglers. Finally, authorities bowed to the inevitable, and in 1759 the restrictions on cotton were removed.

Today cotton textiles are a taken-for-granted part of our everyday living. The tremendous advances in production methods plus intelligent merchandising methods have made them generally available for all. Among the important contributions to modern cotton textile manufacture are Staley's sizing and finishing starches.

Staley's starches have proved their superiority in many of the nation's leading textile mills. For information write today.

Staley's Sizing and Finishing Starches for Every Purpose

PEARL STARCH • ECLIPSE®
STA-GEL® • STA-THIK® • DEXTRINS
STACLIPSE • CORN SYRUP

PRODUCTS FROM CORN
Staley's

THERE IS A SUPERIOR QUALITY STALEY STARCH FOR EVERY TEXTILE NEED

A. E. Staley Manufacturing Company, Decatur, Illinois

THIS IS NO. 103 OF A SERIES ON

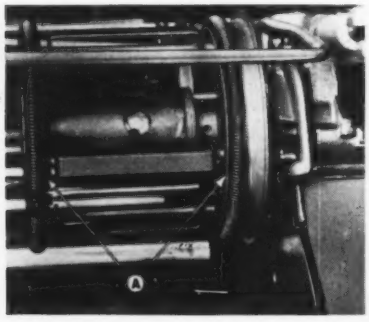
GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation.

Identify No. 250B Sizing Tube Chucks When You Remove Them

At times, it may be necessary to remove the sizing chuck from a No. 250B Sizing Machine spindle.

When two or more chucks have to be removed be sure to identify them! That is, see that each spindle or chuck is tagged so that chuck can be replaced on spindle from which it was removed. If this is not done, you will produce an undesirable sizing package. Here's why —



CLOSEUP VIEW of No. 250B Sizing Machine spindle and chuck flanges (A).

During manufacture, chuck flanges are not ground until chuck is assembled on the spindle. By grinding *after* assembly, flanges are concentric with the spindle on which the chuck is used. For this reason, chucks are not interchangeable from one spindle to another. Should you forget to identify them upon removal, you risk replacing them on the wrong spindle. In this case the chuck will not run concentrically with the spindle and an undesirable sizing package will result.

Raise Motor When Changing Pulleys on Roto Coner® Winder

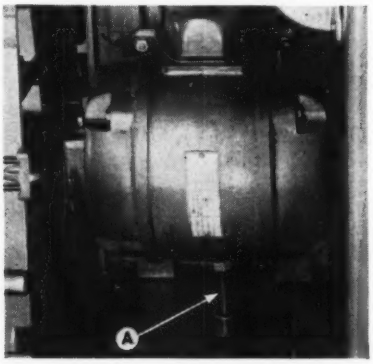
When changing pulleys on the Roto Coner Winder, it is usually necessary to raise the motor in order to obtain enough slack to remove the V-belts from the sheaves. It is not good practice to force belts over the rims of the sheaves.

After a pulley has been changed, either on the motor or traverse shaft and V-belts replaced, the motor should then be lowered until the two sides of the V-belts can be pressed together to within about two inches of touching. It is important to have the proper tension on the V-belts. Too much tension will cause the motor and traverse shaft bearings to overheat, too little causes belt slippage.

TO REMOVE V-BELTS FROM SHEAVES, when changing pulleys on the Roto Coner, raise motor first.

Once the motor has been adjusted to the level that will give the correct belt tension, and the motor rail bolts tightened, the adjusting screw should be brought up snugly against the motor housing. If this last detail is overlooked, the motor may vibrate against the adjusting screw and cause unnecessary noise.

The bolts that hold the motor rails onto the supporting rib in the drive end base should also be checked. They, too, will cause motor vibration if loose.



ADJUSTING SCREW, "A", should be brought up snugly against motor housing after motor has been lowered back into position and bolts tightened.

TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION
ATLANTIC CITY APRIL 26-30 1954

BOOTH NUMBERS: 165 to 179, 276 and 288

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

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LETTERS FROM OUR READERS

Round Table

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

HOW DOES BRITAIN DO IT?

Dear Editor:

How does America produce so much? I refer to the answer given to A. T. Fusiarski in your October, 1953, issue.

In calculating the yearly production per spindle on your figures, one arrives at the surprising result that one American spindle is supposed to produce just 10 times as much as its British brother.

Can American spindles turn with 100,000 revolutions per minute? Can American travelers run 10 times faster and can American front rollers deliver 10 times as much yarn as those in Great Britain?

Do you yourself believe that your thesis of "other countries being able to adopt American methods if they only tried" explain this discrepancy?

What has the fact of one worker tending up to 30 sides to do with the production per year, per spindle?

Why did you not explain, among many other factors, that British mills can only operate in one shift and that a very much greater percentage of the 34-million British spindles than of the 23-million American spindles are engaged in producing fine counts up to 150s?

That's what's happening in American and British mills, and it has nothing whatsoever to do with modern equipment and cost-control methods. American plants and methods may account for a very small increase in production per spindle but can never be made to explain a tenfold higher result.

I therefore consider your answer as misleading and particularly unfair to the British spinner.

Should Mr. Fusiarski have already paid his 1,000 cruzeiros and should he be unable to recover them after having had your answered reply to his question, I believe you should, in fairness, refund this in 25 good American dollars.

E. STIGLITZ

Geneva, Switzerland

[*Some of the apparent discrepancies in these figures were explained in TW, Jan. '54, p. 149.*—EDITOR]

THE OVERSEER IS IN A KEY SPOT

Dear Editor:

The overseer is "the company" to most of the workers under him. If he is tactful and considerate, the company is tactful and considerate. If he has enough technical ability and enthusiasm to gain the respect of his operators, he has an excellent chance to direct the thoughts and opinions of the employees; with the employees behind him, the possibilities of raising the quality and production of a department are practically unlimited.

The conscientious overseer may find himself caught between opposing loyalties, one to his employers and the other to his operators. His success as a leader may very well depend on how well he is able to weld these two loyalties together.

He should never miss an opportunity to explain the employer's point of view to the operators and vice versa. Top management is wrong no less often than the operators. The overseer, since he is between the two extreme positions, has a good view of both sides.

However, the overseer's loyalty is due management, and he should consider it his duty to point out to his employees the fundamental economic fact that they can be paid only out of the results of their labor.

Hamilton, Ont. N. H. POMFRET

DOUBLINGS ARE STILL NECESSARY FOR GOOD YARN

Dear Editor:

Too many mills are forgetting that testing devices do not always give a complete picture of sliver and yarn quality. If yarn quality is checked with a series of yarn

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"I pay you plenty, Schnitzel. You don't have to take on any side lines!"

breaks and sizes, sliver with the best rating on the tester often shows up worst. If yarns are checked in the loom, usually the yarns with the least number of doublings cause a higher percentage of stops.

Doublings are still a necessity in yarn processing, and the cheapest and best place to get them is still in the drawing process.

Greenville, S. C. R. H. PHARR

COST REDUCTION IS ESSENTIAL

Dear Editor:

The margin between making a profit and showing a loss is, for many, perilously slim. Today, industrial operations are generally characterized by high capacity, high investment, high fixed and operating costs, and high efficiency. It is the high volume and high efficiency that justify and make possible profitable business in the face of mounting costs.

It is essential to seek out unwarranted costs and bring them under control, not only for our own good but also to maintain our nation's industrial activity at a high and prosperous level.

Greenville, S. C. TEXTILE ENGINEER

HOW TO IMPRESS A WORKER'S FAMILY

Dear Editor:

When mill management follows the modern trend of sending occasional communications to the worker's home, these suggestions may greatly increase the letters' effectiveness:

1. Check and double check names and addresses. The home folks won't be impressed by anything less than absolute accuracy.

2. Avoid nicknames. A worker may prefer to be known as "Chuck" or "Shorty" in the mill, but when a letter comes to his home, he wants it to be a little more formal.

3. Personalize the letters. One individually typed and signed letter a year will do more good than five letters bearing unmistakable signs of mass production.

4. Use top-quality stationery. The mill is making an investment in good will, and the slight additional expense for excellent paper and envelopes may very well double the impression made on members of the employee's family.

5. Before sending a letter, make certain that the man who is to receive it actually had a part in the matter being discussed. Mill management loses prestige when letters are mailed to a long list of workers who have had no vital participation in the project or other subject covered by the letter.

6. Fewer letters, backed up with more thought, can be made an important link between the mill, the employee, and his family.

Harrisburg, Pa. GEORGE M. DODSON

Questions AND Answers

Tape Selvage on Spun Rayons Prevents Curling

Technical Editor:

How can we avoid selvage rollings in boiling off and dyeing spun-rayon 2x1-twill fabrics? (9759)

This type of fabric must be handled in slack form by the finisher, but unevenness in the contraction of the selvage and the body of the cloth is increased by a tensionless boil-off and dyeing.

Cotton fabrics with slack selvages are boiled off and dyed under a fair amount of tension by winding the goods on rolls, and this procedure may work on your fabric. Once the goods are scoured, the tension between the selvage and the body of the cloth sometimes tends to equalize.

The best way to reduce edge rolling is to weave a true tape selvage so that the selvage does not run slack during weaving.

If the cloth is woven on a dobby loom with the body of the cloth drawn in on a six-harness 2x1 left-hand twill weave, try drawing the selvages in two ends per heddle and reed four ends per dent.

If the cloth is woven on a cam loom, install a tape-selvage motion and draw the selvages two ends per heddle and reed four ends per dent.

If the selvages run too tight by reeding four ends per dent, try reeding six ends per dent.

Set Spindle Drive Properly To Improve Yarn Uniformity

Technical Editor:

We are trying to improve the uniformity of our yarn strength and twist. What can we do about variations that are caused by spindle tapes? (9763)

When you replace a spindle tape, make sure that the top of the tension pulley is on a level with or slightly lower than the center line of the spindle whorl. If the tapes are cut and sewed properly and if the pulley hanger rods are properly set, all tapes will pull steadily and the pulley arm will have a free-floating movement.

If the tension pulleys are not set properly, the tapes will rub against the flanges of the spindle whorl; in this case, the tapes can be damaged and the spindles will slip.

If the pulley arm doesn't have free movement, a short-sewn tape will give such a strong pull on the spindle that it will chew into the spindle bolster. A tape that is too long or one that stretches will give the pulley too much of a vertical movement; as a result, the spindle tape will give a rough action to the spindle by working up and down.

A torque meter can be used to test the tension of the spindle tapes. A torque of 12 to 16 oz.-ins. is recommended. If the spindles are driven by tapes with an even pull, yarn twist and breaking strength are more uniform.

Slub and Nub Fancy Yarns Are Not the Same

Technical Editor:

What is the difference between nub and slub yarns? (9762)

Nub yarns are made by twisting one end about another end many times in a very short space. This twisting causes enlarged places on the surface of the yarn.

The spacing of the nubs may be varied. The size and spacing of the nubs are obtained by interrupting the movement of the base yarn at predetermined intervals and for varying lengths of time.

A binder is sometimes used to obtain a corkscrew effect or to securely hold the nub in place. Depending on the size of the nub, these yarns are also known as knop or seed yarns.

Slub yarns are composed of tufts of roving inserted at intervals between binder yarns, or continuous slubs or flakes held with binder yarns. The slubs appear like soft, elongated nubs. These yarns are sometimes known as flake yarns.

Give a Laboratory Three Coats of Paint

Technical Editor:

What type of paint job do you recommend for a textile-research laboratory? (9761)

Use three coats: a primer or sealer, a mill-white undercoat, and a mill-white fume-resisting finish coat.

Better Evenness Results May Be Obtained on Six-Roll Drawing

Technical Editor:

We have changed our drafting arrangement on our four-roll drawing frames to coincide with the arrangement shown in "Uniformity Improvement Centers on Drawing" [TW, Aug., '53, p. 115]. We are running 100% Middling 1⅛-in. California cotton and delivering 65-gr. sliver and getting satisfactory evenness results.

We wonder if the uniformity is better because the fibers get a rest between the two drafting zones. We think that even better results may be obtained by changing the arrangement on a six-roll drawing frame.

Have any applications of this theory been made on six-roll machines? (9758)

One explanation for better uniformity by changing the drafting zones is the rest zone between the pairs of rolls. Try some of the following drafts on your six-roll drafting equipment:

T = Total draft = $dXd_1Xd_2Xd_3Xd_4$

	d	d_1	d_2	d_3	d_4	Total draft
I	$0.80\sqrt[3]{T}$	1.06	$1.00\sqrt[3]{T}$	1.08	$1.10\sqrt[3]{T}$	$0.80X1.06X1.00X1.08X1.10\ (\sqrt[3]{T})^3=T$
II	$0.91\sqrt[3]{T}$	1.06	$0.957\sqrt[3]{T}$	1.08	$1.01\sqrt[3]{T}$	$0.91X1.06X0.957X1.08X1.01\ (\sqrt[3]{T})^3=T$
III	$0.957\sqrt[3]{T}$	1.06	$0.957\sqrt[3]{T}$	1.08	$0.957\sqrt[3]{T}$	$0.957X1.06X0.957X1.08X0.957\ (\sqrt[3]{T})^3=T$

Note that the product of the draft coefficients must equal 1.00.

$1.00X(\sqrt[3]{T})^3=T=$ Total draft

Drafts d_1 and d_3 are constant but may be changed slightly up or down depending on the occasional weight changes, which seldom exceed one tooth to maintain the standard weight of sliver.

80x80 Is Best Construction For Teaching Weavers

Technical Editor:

What is a suitable cloth construction for teaching weavers and loomfixers on 40-in. Model-E looms? (9757)

The following construction will suit learners on Model-E looms:

80 ends per inch
80 ppi.
30s warp yarn (carded, not combed)
42s filling yarn

The total warp ends in the cloth are 3,248 (including 24 ends in each selvage, drawn double). This cloth can be woven on two-harness cam looms with double rows of heddles on each harness.

A No. 40 reed is required, and the warp ends are drawn two ends to the dent in the reed. The size of the filling can be changed to add or subtract 10 or more picks per inch.

Fish-Net Standards Are for Fine Types Only

Technical Editor:

Are there any standards for the manufacture of fish nets? (9755)

There are some standards for fish nets with fine yarns that are used for the smaller-type nets, but there are no standards for the larger commercial fishing nets.

Boston net and Mission net are two standard nets. Boston net is a woven leno netting made with groups of three warp yarns crossed with groups of three filling yarns. This netting is 48 ins. wide and has 34 ends and 34 picks per inch. The warp and filling yarns are 60/2, and they are generally combed cotton yarns.

Mission net is also a three-warp, three-filling netting; but it has larger and coarser yarns and is made from either carded or combed cotton. Mission net is made 39 ins. wide with a tape selvage and has 24 ends and 16 picks per inch with 25/2 yarn for both warp and filling.

The so-called commercial fish netting is the "knot" type, either made by machine or hand tied. The latter is called "true" knot netting. This netting is made from cotton, nylon, linen, manila, and other bast-fiber yarns.

The ply yarns are larger than those used for the woven leno fish nets, and the meshes for the knot type range from ¾ to 6 ins.

How Mop Yarns Are Made

Technical Editor:

How can we manufacture yarns for mops? (9689)

Feed 100% card strips directly to the hopper of a No. 7 S-L feeder. Set the combing roll to the pin apron to break up the strips sufficiently. A 14-oz. picker lap is suitable.

A continuous-stripping attachment on the cards gives good results. Open the flat settings to 0.012 in. and the front and back plates to 0.034 in. The production from the cards will be about 15 lbs. per hr. Frequent stripping of the doffer and the cylinder is necessary. For blends of strips and regular stock, the mixing can be done at the back of the drawing frame. Six ends of sliver are fed at the back.

For 1.1s yarn, 10x5 slubbers are used with 70-gr. 100%-strips drawing sliver at the back. Spindle speeds are increased to 1,000 rpm. Twist per inch is inserted according to the buyer's specifications. Yarn is shipped on paper tubes that slip over the regular slubber bobbins.

Make 3.00s yarn from single-creeled 0.50-or double-creeled 1.00-hk. slubber roving on a fine 7x3½ roving frame. Spindle speeds are increased to 1,400 rpm. Either 100% or 50% strips may be used to make this yarn. The yarn is rewound on Roto-Coners from the roving bobbins for shipping.

Make 8.00s yarn from a single 1.25- or double 2.50 hk. long-draft slubber roving on fine roving frames (7x3½). The spindle speeds are 1,400 rpm. or slightly higher. Either 100% or 50% strips can be used.

There are several other unorthodox ways of getting high mop-yarn production at low cost. The quality requirements are usually low as regards appearance, but some buyers are sticklers for high breaking strength.

Kinks AND SHORT-CUTS

Get Warp-Size Content In Four Easy Steps

In most mills, including our own up to six months ago, the job of determining the actual size content is a long, drawn-out task. It involves taking samples of the sized yarn to the laboratory where they are first bone dried (usually overnight), then precisely weighed, boiled in water, heated in a desizing solution, boiled off again, bone dried again (usually overnight, a second night), and finally precisely weighed a second time. From these various weighings, calculations of percentage of weight loss are obtained, from which is subtracted an estimate of the loss due to normal boil-off (about 3%), to get the actual size content.

Thus, the conventional method of getting size content in our company was such that it was almost a full-time job for one laboratory technician to check each slasher once a week. Moreover, by the time the results were available, the beams from that particular set were already being woven. Hence, size-content testing by this conventional method was not quality "control" but merely quality "evaluation."

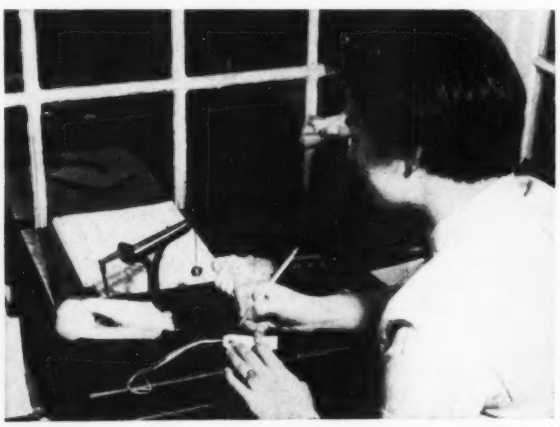
New Method in Detail

In our new method, we first cut about 1 yd. of the unsized warp from the front of the slasher as the new set is being started up (before the yarns are lowered into the size box). This yarn is held by the spikes made from part of an old Kirschner beater. (The spiked board is fixed to the top of a truck that can be wheeled to any of

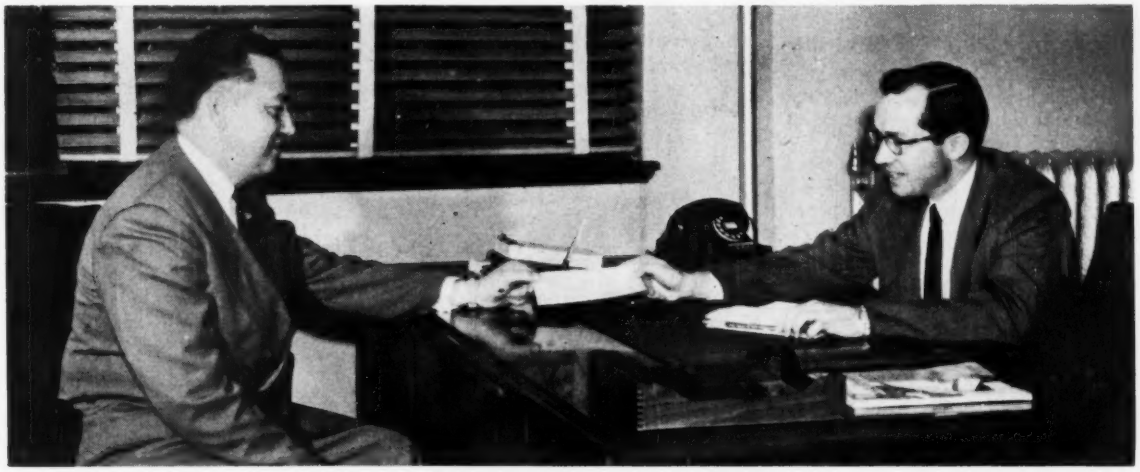
AT THE START-UP, cut off about a yard of unsized yarn and set it aside for closer measuring later.

WHILE THE SET RUNS, accurately measure the unsized yarn over the board so marked. Note Kirschner pins.

MEASURE SIZED YARN over another board that accounts for normal slasher stretch.



AFTER 30 MINS. in the slashing office, weigh both samples and calculate size content.



1953 Kink Prize Winner

A CHECK FOR $500 swaps hands as Managing (and Kink) Editor Jim Kennedy (right) presents the 1953 annual prize to Charles L. Sickles, overseer of spinning, Nelson plant, American & Efird Mills, Inc., Whitnel, S. C. Mr. Sickles's Kink "This Machine Cleans 240 Revolving Clearers an Hour" appeared in the October, 1953, issue and won the $25 prize for that month.

It was Mr. Sickles's third try at the contest. His first two Kinks didn't win, but he kept sending in Kinks, as he said, "to make a little extra money and take a crack at the prize."

What does he plan to do with the money? "Put it in the bank," he said; then added, "for a while at least. I've got a wife and three kids, you know" (Sandra, 10, Jimmy, 6, and Cynthia, four months).

the slashers.) At the slasher-tender's convenience, this yarn is cut across an 18-in. board lined with sheet metal. This 18-in. unsized sample is tied into a loose knot, labeled, and left to stand in the slashing office.

As any particular beam is doffed during the set, a similar sample of the sized yarn is taken. This time, however, when the strands are cut, they are cut over the board marked "Sized." This board differs from the "Unsized" 18-in. board by the normal stretch of that particular slasher. Thus, on our slashers where the stretch averages 2%, this "Sized" board is 18¾ ins. long (2% longer than the "Unsized" board).

After being cut to length, this sized sample is also left in the slashing office to come up to the same moisture content as the unsized sample. Thirty minutes has been found sufficient for this step, since the two samples do not differ radically from each other as to moisture and since the yarns are in an open state. Both samples are then weighed on a grain scale. The size content is merely the difference between the two weights divided by the unsized weight, since the change of weight caused by stretch was already taken into account in the cutting of the samples.

Results Are Ready in 30 Mins.

We have found that it is not necessary to condition the samples at standard atmospheric conditions, as in a laboratory, as long as both are brought to the same conditions.

Thus, with this method, the slasher tender usually knows the size content within a half hour of the time the samples are taken. We make several size-content tests from each set, such as every fourth beam. In each case, the same unsized sample is compared with each new sized sample. This practice has enabled our slasher tenders to control their slashing not only by viscometer and cup readings but also by actual size contents.

At the end of each set, the results are reported to the general manager and quality-control department. The slasher tender's viscosity cup readings are also shown for the beams tested. By so doing, we have been able to correlate cup readings (in seconds of flow through a standard brass cup) with actual size contents, since the cup tests are made even more frequently than the size-content tests. From these figures, we have found that many times an increase in viscosity can lead to a decrease in size pick-up, just as well as a decrease in viscosity can lead to the same end.

One random sample per week of both the sized and unsized yarn (after being tested in the slasher room by the new weight method) is sent to the laboratory. Part of the sized sample is desized by the conventional method as a check on the slasher room.

Each time we make such checks, the results agree almost perfectly; only once have they differed by as much as 2%. Thus, our new technique is not only fast but also quite accurate.

Reaction toward this new procedure from the slasher tenders has been very favorable. Although it amounts to a little more work, they consider it an aid to evaluating the effectiveness of their slashing. And, either as a direct or indirect result of this new technique, we have not had a "soft" warp delivered to our weave rooms since we started this system. *Edward S. Rudnick, Wamsutta Mills.*

Trap Blows Warning Whistle For Low Boiler Water

A ball-float trap on the water column of a 180-hp. boiler acts as a low-water alarm in a Texas plant.

When the boiler water drops to a predetermined level, the trap blows a whistle just before the low-water cut-off stops the flow of fuel to the burner.

The engineer, when he hears the whistle, starts the stand-by boiler-feed pump to bring the water back to the proper level.

Its job done, the trap then stops blowing the whistle. *Armstrong Machine Works, Three Rivers, Mich.*

Kinks and Short-Cuts

Truck for Twister Bobbins Fits Several Sizes

At Sewing Silks Ltd., Perivale, England, a new bobbin truck is improving operator efficiency and handling.

The truck, which was made from standard angle-iron stock riveted and bolted, has four rubber-tired wheels. There are four fixed shelves and space for three more in between if smaller bobbins are used.

Each shelf has 49 pins set in it and can be pulled out as shown in the picture. A steel flap at the back of the shelf rests against pin supports on the truck frame to hold the shelf in a convenient tilted position. Another set of pins protrudes inward through the uprights to prevent the shelf from being pulled out too far.

Short bobbins can be accommodated by intermediate shelves held in place by wing nuts.

This same idea can be adapted to a battery filler's truck. *Clifford T. Bower, London, England.*

BOBBIN TRUCK has pins set in pull-out shelves that lock in this tilted position for ease and efficiency of handling.

Use a Brass Strip To Clean Dirty Files

Our metal files get clogged quickly, and then they don't do a good job.

We filed the end of a piece of 1-in. brass strip ⅛ in. thick, and soon the strip's grooves coincided with the file's grooves.

File cleaning is now an easy job for us. *I. Zagiel, Boston, Mass.*

$500 for Best Kink in 1954

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men.

In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

NOW – NEMA Type XII

THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

CAPTIVE SCREWS assure tight cover fit

EXTERNAL MOUNTING FEET eliminate need for conventional leaky mounting holes within the enclosure

NEOPRENE GASKET provides positive cover seal

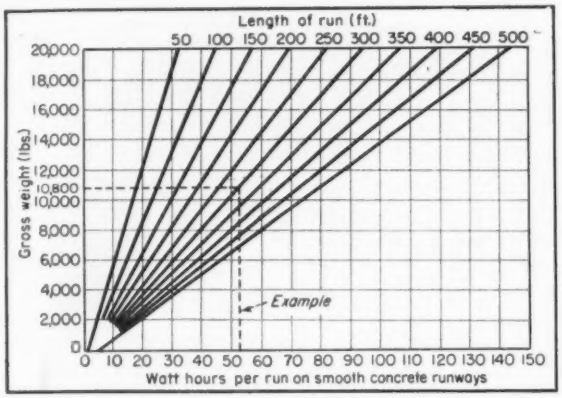
WELDED TIGHT ENCLOSURE without knockouts excludes dirt, dust, oil, and splashing coolant

This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring the exclusion of dirt, dust, oil and coolant.

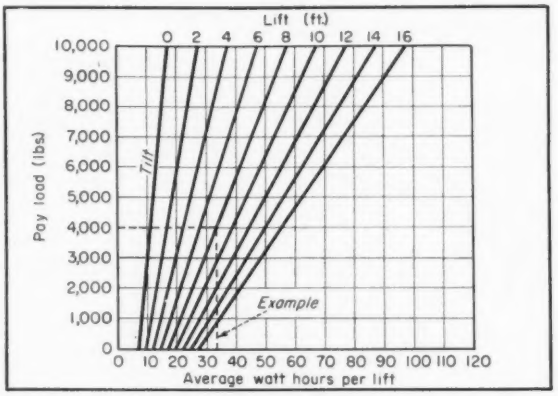
The rugged, visible-blade switch mechanism within the special industry enclosure has all the performance features that have made Square D an overwhelming "first choice" for fifty years.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY



TRAVEL CURRENT alone is determined from this chart after you know gross weight (10,800 lbs. here) and the distance to be traveled (300 ft. in the example). Watt hours per trip for this part of the truck's work are approximately 52. Accelerating current for one start is included, and ramps of 2% or less grade can be ignored in calculating travel current from this chart.



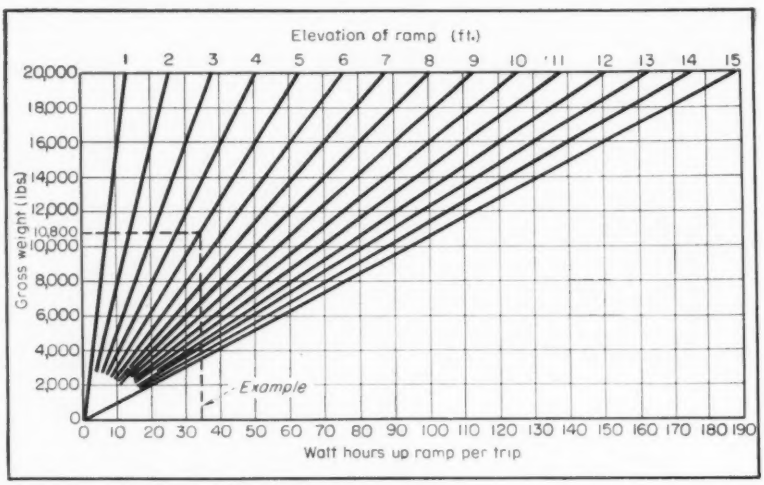
LIFT AND TILT CURRENT comes from this chart. Locate pay load on vertical scale, go straight across until you come to the average-lift-height line, and then drop down to the bottom and read watt hours per lift. Current for 10° back-and-forward lift is included. In the example, load weight is 4,000 lbs., lift height is 8 ft., and current is 33 watt hours per lift.

How To Figure Battery Needs For Electric Lift Trucks

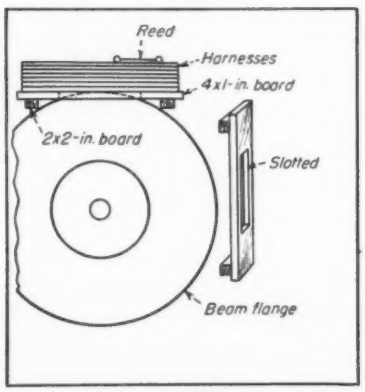
The size of battery needed for an electric lift truck is not standard but depends on how the truck is used. To simplify the calculation of battery size, Automatic Transportation Co. has prepared these three charts.

Use the charts with these precautions:

1. If your truck cannot accommodate the size of battery indicated, enlarge the compartment or change batteries more frequently.
2. The charts are based on one acceleration per run. A lot of stops and starts can double the current requirements.
3. Add a 25% safety factor to the power requirement you get from the chart.



RAMP CURRENT is figured from ramp elevation and gross weight on this chart. As on the other two charts, locate proper figure in vertical column, go across to correct sloping line, and drop to bottom scale. Gross weight of 10,800 lbs., and ramp height of 5 ft. gives 34 watt hour requirement per trip.



THE SLOTTED SUPPORT is placed over the beam flanges, the harnesses and reed are laid on and tied down, and the warp is ready.

Protect Harnesses and Reeds With a Homemade Support

Reeds and harnesses on drawn warps at our mill used to be damaged while they were being transported from the drawing-in room to the weave room.

Our old method of handling drawn warps was to tie the harnesses and reeds to the beam heads with twine and roll them to the weave room on dollies. We still use the dollies, but we fasten the patterns to the beam differently.

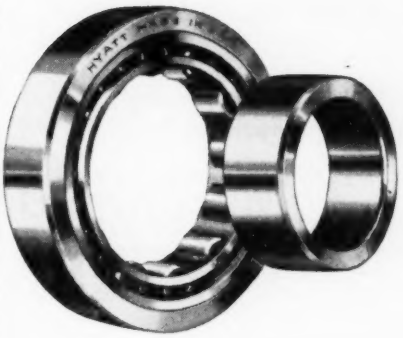
We made several wooden supports to hold the patterns in one constant position on the beams. The supports are made from lengths of 4x1-in. boards 24 ins. long. Each board is slotted in the center to go over the flange of the beam.

Blocks of 2x2-in. wood stock 4 ins. long are nailed crosswise to the ends of the slotted boards.

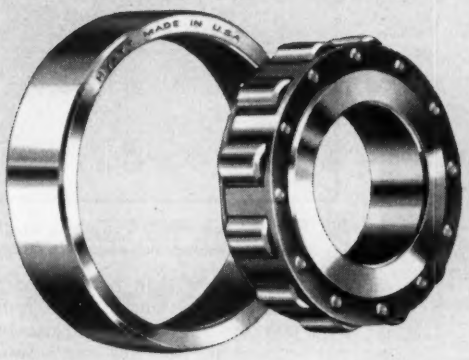
One of the slotted boards is placed over each end of the beam on drawn warps, and the harnesses and reeds are laid on the boards. A piece of twine is wrapped around each end of the pattern and the beam to hold them together.

Now we transport drawn warps and store them as long as necessary without damage to the reeds, harnesses, or warp ends. *H. J. Armstrong, Yorkshire, England.*

3 ways to handle your RADIAL LOAD PROBLEM

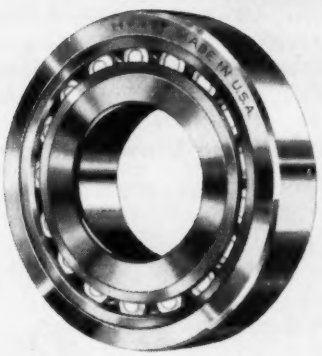


1 If your design requires a large shaft diameter to produce greater rigidity without disturbing boundary dimensions, a separable inner race type Hyatt Hy-Load bearing can be used with the inner race omitted. Rollers operate directly on a suitable hardened and ground shaft.



2 When the housing bore must be kept to a minimum, a Hyatt Hy-Load bearing with a separable outer race can be used—with the outer race omitted. The rollers then operate directly in a housing bore of suitable hardness and finish.

If your design applications involve radial loads, the best way to handle the job is with Hyatts—for Hyatt offers industry's most complete line of straight radial roller bearings! Hyatt Hy-Loads, for example, are made in three diameter series and two basic widths, to standard dimensions. There are ten major types—for the heaviest radial loads, and light or intermittent thrust loads. Four have separable inner races, two have separable outer races and four are non-separable, thus permitting wide flexibility in design and assembly procedures. Write for our general catalog No. 150—it will put the solution to any roller bearing problem at your fingertips. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



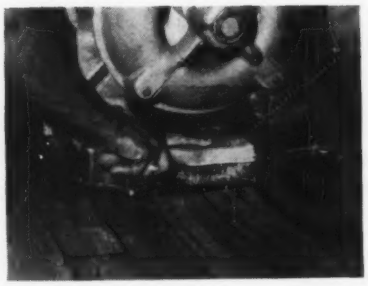
3 For designs requiring a bearing installed as a unit, there is the non-separable type of Hyatt Hy-Load. Whether you select a separable or non-separable type of Hyatt Hy-Load, they are available in a wide range of sizes.

HYATT

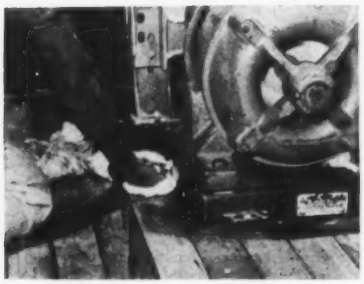
STRAIGHT BARREL TAPER

ROLLER BEARINGS

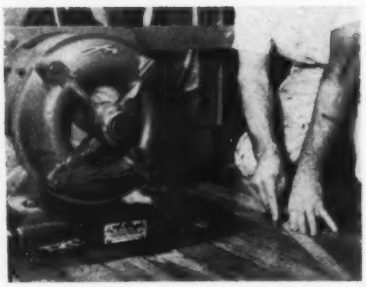
How To Apply Panels Of Oil-Masking Paint



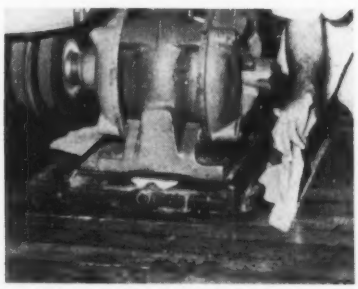
1. REMOVE LOOSE DIRT and oil with a wire brush on all areas where floor-machine operation is difficult and masking panels are to be used.



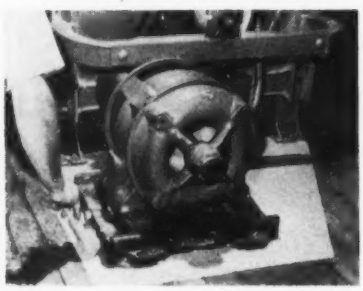
2. WIPE OFF the loosened dirt and oil with a cloth lightly moistened in Stoddard solvent. Strip off any heavy surface coating.



3. MARK the border with a straight edge or masking tape. Measure exactly to make panels identical.

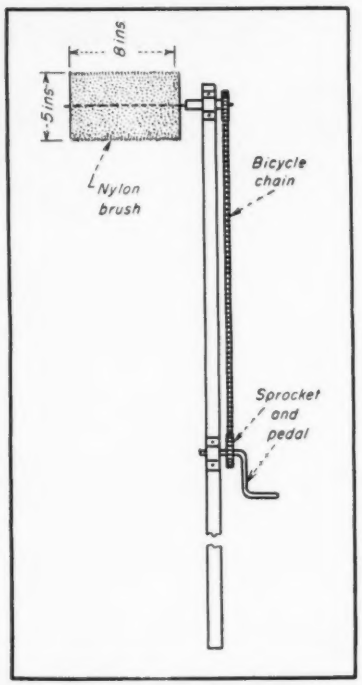


4. PAINT with a 4-in. brush. Flow it on freely, and one coat should suffice. The oil-cover paint dries in 30 mins.



5. PAINT JOB dries so fast that fly and lint don't easily adhere. *G. H. Tennant Co., Minneapolis.*

Rotating Brush Has Long Reach To Clean Air Ducts



DUCT BRUSH is at the end of a long handle to eliminate climbing and clean effectively.

In the past, a man had to use a ladder to clean air ducts in our mill. The task was unpleasant because he was sprayed in the face every time he cleaned a duct.

Climbing is eliminated with our long-handled revolving brush, and the man has an easier and cleaner job.

Dimensions of the brush depend, of course, on duct height and the size of the opening. We used an 11-ft. piece of 1x1 wood and a 5-in.-dia. nylon brush that is 8 ins. deep.

The brush is driven by an old bicycle sprocket and pedal through a bicycle chain, as shown in the sketch.

I had the brush specially made for the job.

The new arrangement cleans in and around the duct opening very satisfactorily, eliminates the hazard of climbing, and makes the cleaner's job more pleasant. *J. B. Boyter, Dallas, N. C.*

Find Wrong Draws Quickly With a Special Pattern Chain

On many fabrics woven on dobby-equipped looms, the patterns are so irregular that it is hard to find misreeds and other misdraws in the warps.

We have a simple way of checking newly drawn warps for misdraws.

A special pattern chain is built for each style of cloth and is stored within easy reach of loomfixers so that all new warps can be checked with it.

The chain is made to have all harnesses down except the front four harnesses. These four harnesses are woven plain for eight picks of cloth. Then the front harnesses are down, and the next four harnesses are woven plain for eight repeat picks. This procedure is repeated until all harnesses in the pattern have been woven plain for eight continuous picks.

Where tape selvages are run on extra harnesses, the selvages weave throughout the special procedure. When selvages are drawn on body harnesses, these harnesses must weave at all times; and in this case, only two other harnesses are woven with the selvage harnesses. This method is much slower than the method used on tape selvages.

After about 6 ins. of cloth is woven with the special chain, wrong draws are easily found.

Then the regular pattern chain is placed on the loom.

There is only one disadvantage in checking new styles with the special chain: the job takes 10 to 15 mins. But the time is well spent because wrong draws are all but completely eliminated. *James C. Faulkner, Fayetteville, N. C.*

Trap On Every Dry Can

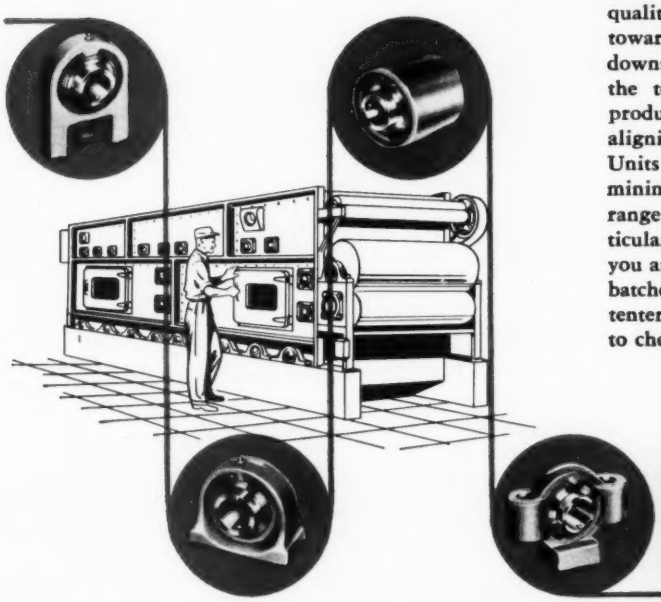
At Charles Laschman Co., Phoenixville, Pa., every dry can is individually trapped with traps that have built-in strainers and Johnson joints.

Half the traps are on each end so that one end is not so cluttered that maintenance is difficult. *Armstrong Machine Works, Three Rivers, Mich.*

Kinks and Short-Cuts

In addition to a wide range of standard sizes of Pillow Blocks, Cartridges, Flanges, Flange-Cartridge and Take-Up Units, SEALMASTER Bearing Units are available in special types and sizes as required.

SEALMASTER BEARING UNITS are tailored to the requirements of the... TEXTILE INDUSTRY!



In today's competitive textile market high-speed, top-quality production is a must. There's a decided trend toward automaticity and *no place* for costly breakdowns. SEALMASTER engineers have kept pace with the textile industry's continuing quest for greater production efficiency. Today, SEALMASTER self-aligning, pre-lubricated, and factory-sealed Bearing Units assure dependable, high speed production with minimum maintenance. They are available in a wide range of types and sizes, each tailored to meet particular requirements of the textile industry. Whether you are a manufacturer of textile machinery—spoolers, batchers, warpers, padders, pickers, cards, slashers, or tenters—or an end producer of fabric—it will pay you to check into SEALMASTER Bearing Units.

Write for FREE Catalog 845 or see your nearest SEALMASTER distributor.

SEALMASTER
BALL BEARING UNITS

SEALMASTER BEARINGS
A DIVISION OF STEPHENS-ADAMSON MFG. CO.
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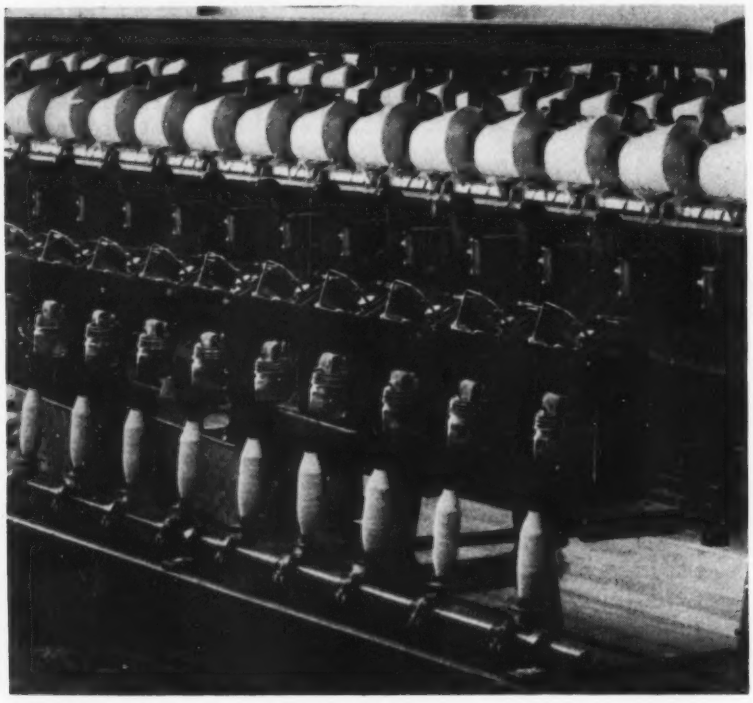
Kinks and Short-Cuts

Yarn-Lubricating Attachment Made From Knitting Device



LUBRICATING JARS are fixed to the winder frame above the yarn package. Yarn is run over the felt wick to give a well-lubricated knitting yarn.

Our winders are equipped with waxing attachments, but we frequently use yarns that need emulsion. Instead of using a trough that accumulates dirt, we fitted our winder with emulsion jars that are used on knitting machines to lubricate yarn passing to the needles.

An additional yarn guide is fixed to the front of the jar, and a bracket is fixed to the back of the jar. The bracket is screwed to the winder so that the jar is positioned over the yarn package. The yarn is run through the yarn guide, over the felt wick in the emulsion, through the back porcelain guide, and through the stop motion to the winder spindle.

When we don't require emulsion, we simply pass the yarn straight to the waxing attachment. To prevent fly from accumulating on the wicks when we have long runs with no emulsion, we unscrew the one screw holding the bracket and remove the jars. *Dan Singer, Newton, Mass.*

How We Determine Section-Beam Capacity

We use a constant to determine how many yards to put on each section beam in warping. The constant insures full beams without a lot of detailed calculations.

First we calculated the weight of yarn on full section beams. We took the average of eight or ten beams of different yarn numbers to eliminate this variable.

$$\text{Lbs. of yarn on beam} = \frac{(\text{total ends})\ (\text{set length in yds.})}{(\text{yarn number})\ (\text{standard})}$$

The yarn number must be in singles equivalent. The standard is 840 for cotton-system yarns, 560 for worsted, etc.

For example, if a full beam of 25/2 cotton yarn has 600 ends and contains 10,000 yds.,

$$\text{lbs. yarn on beam} = \frac{(600)\ (10{,}000)}{(12.5)\ (840)} = 571 \text{ lbs.}$$

Then we rearrange the formula to leave section-beam capacity as the unknown factor.

$$\text{capacity (yds.)} = \frac{(571)\ (\text{yarn no.})\ (840)}{(\text{total ends})}$$

This formula reduces to give the constant that we use for all cotton-type yarns:

$$\text{capacity (yds.)} = \frac{(\text{yarn no.})\ (479{,}640)}{(\text{total ends})}$$

We use the constant to determine section-beam capacity when we change yarn number to total ends.

A separate constant must be determined for filament yarns, but this one works for all the yarns we are spinning from several synthetic fibers and cotton on the cotton system. *James C. Faulkner, Fayetteville, N. C.*

Best-Kink Award for January

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for January, according to TEXTILE WORLD reader-judges, was:

"This Simple Device Makes Box Motion Action Positive"

By Charles S. Bicksler, Lancaster, Pa.

Mr. Bicksler is being sent a check for $25 with the compliments of TEXTILE WORLD.

Large White Elephant Spots Accident Areas

A little humor is injected into a serious problem, safety, at the Catherine plant of Avondale Mills.

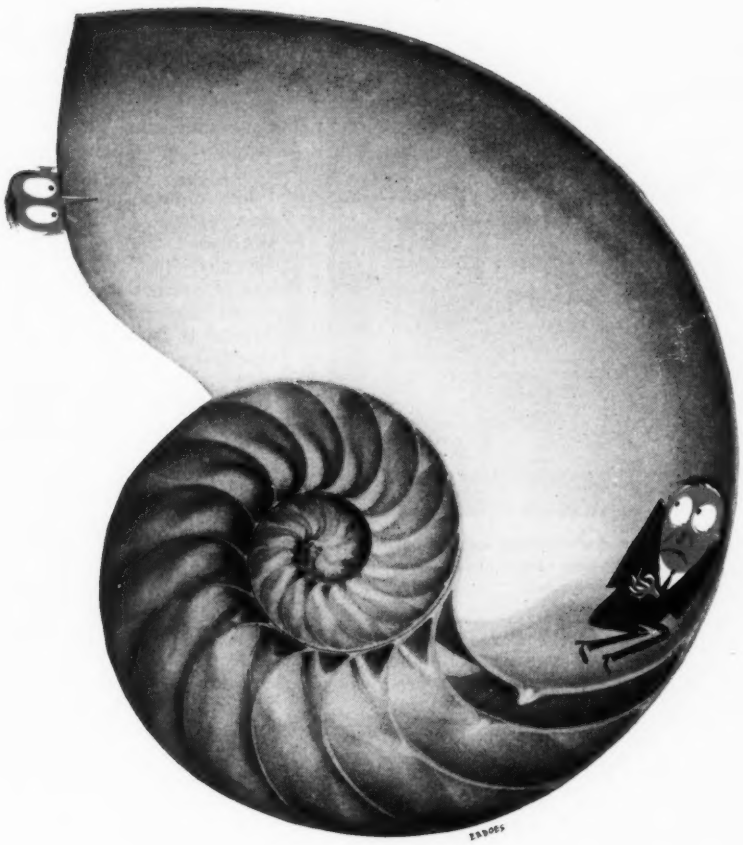
A large white elephant—made of cardboard—is hung from the ceiling in a department with a poor safety record.

The huge poster, which is about 6 ft. square, attracts lots of attention, and nobody wants it around.

Posting this unmistakable sign has helped employees to remember that safety thinking is important all the time. *The Avondale Sun.*

Kinks and Short-Cuts

Jumbo-Size Layout Board Keeps Spinning Data Handy



aloof?

No textile manufacturer can afford to stand aloof from the facts of good lubrication. The oils and greases he uses in his operation are a tremendously important factor on his profit and loss sheet. The complete Cities Service line of lubricants for the textile industry has proved to be a great money-saver for textile operations throughout the country. Why not talk to a Cities Service Lubrication Engineer about whatever problems you may have? Call your nearest Cities Service Office or write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

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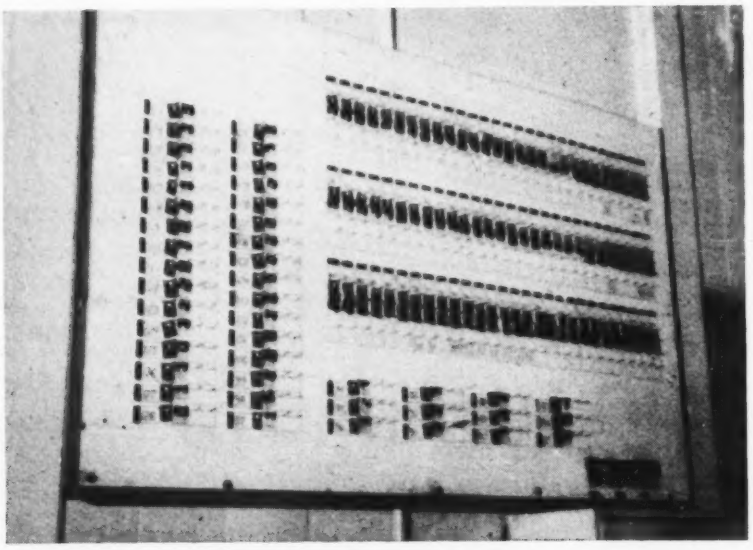
QUALITY PETROLEUM PRODUCTS

Kinks and Short-Cuts

Jumbo-Size Layout Board Keeps Spinning Data Handy



SPINNING-FRAME LAYOUT BOARD is 4x6-ft. beaverboard with frames outlined on it. Each frame space has this information: frame type and number, yarn number, hank roving, front-roll speed, twist multiplier, and when the frame was last overhauled.

Our spinning room has several kinds of spinning frames, and we run several hank rovings and yarn numbers. So we had a lot of trouble keeping twist gears straight, yarn numbers correctly recorded, and the proper roving at each frame.

We solved our problem by having a jumbo-size layout made of the spinning room. A 4x6-ft. piece of beaverboard was just the right size for the job.

First, we drew small outlines of all the frames on the board and put the frame numbers on. Then we used colored cellophane tape to designate the type of frame. This tape was pasted at the end of each frame space on the board.

We then tacked five nails—to hold small tabs—in each frame space. Pieces of colored cardboard 1x$\frac{3}{4}$ ins. were cut out, and a hole was put in each piece to hang on the nail.

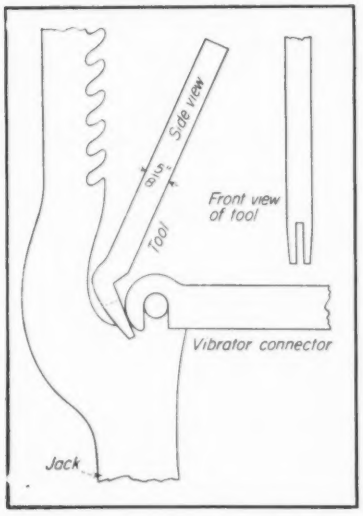
One color represents each of the following items: yarn number, hank roving, front-roll speed, twist multiplier, and overhaul (regular or breakdown).

Now, we have all of our information in one place, and it is easy to see. This one focal point gives us a complete picture of spinning-room operations.

Everybody is happy with the big board—the timekeeper, the second hands and overseer, and the roving haulers.

We don't get mixed roving any more, either. *Edward L. Mann, Union, S. C.*

Here's a Tool To Remove Vibrator Connectors From Jacks



NEW TOOL is placed underneath the tip of the vibrator connector with the handle against the jack. Give the handle a sharp jerk, and the connector comes loose.

We used to have a lot of trouble removing vibrator connectors from jacks when either part became broken on our W-3 looms equipped with Knowles head motions. Our old way of removing the connectors was to drive them off the jacks with a screwdriver and hammer. We broke and bent a lot of connectors and jacks this way and had to replace them with new ones.

We have made a tool that removes connectors with just a flick of the wrist.

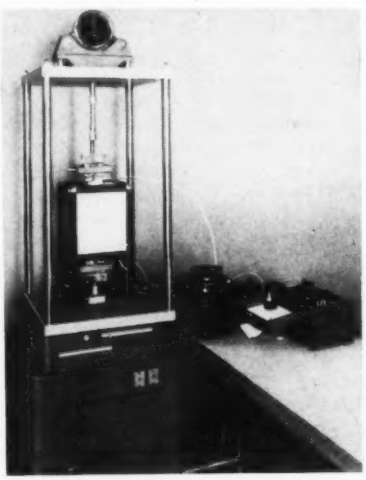
The tool is made from an old box-lifter rod. One end of the rod is heated and flattened to $\frac{1}{4}$-in. thickness for a distance of 2 ins. A slot $\frac{3}{8}$ in. wide and 1 in. long is cut in the center of the flattened end.

The rod is reheated on the flattened end and bent to a gooseneck shape with the slotted surface parallel to the body of the rod. The over-all length of the tool is 28 ins.

To remove a vibrator connector, we merely slide the slotted surface of the tool underneath the tip of the connector, place the heel of the tool against the jack, and give the handle a quick jerk.

The connector pries off easily without danger of breakage. *John W. Lewkowicz, Brockton, Mass.*

Controlled-Heat Chamber Widens Tester Use



SPECIAL CHAMBER shown here on a Dillon Model L Universal Tester is electrically heated and pyrometer checked. This special testing machine was made with an extra-tall column and more width. Specimens can now be tested for breaking strength at extremes of temperature (both high and low, because a cold cabinet can be used).

The chamber can also be filled with water for wet testing.

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THREAD GUIDES

Textile machinery manufacturers have found that AlSiMag guides increase the quality of their machines and result in greater customer satisfaction. Because of their extreme hardness, uniformity and long life, AlSiMag guides have been adopted for machinery and equipment by most machinery manufacturers. These guides are available in a variety of compositions and finishes to meet your particular problems and requirements.

FREE TEST SAMPLES of standard designs sent on request. Test samples to your specifications made at reasonable cost without tool or die costs. Your own tests will prove you can speed processing, reduce down time, improve quality, and save money with AlSiMag guides.

Standard designs available in stock

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HEYDEN BENZOIC ACID

An increasing number of dyehouses are adopting Heyden's Benzoic Acid as a carrier in the piece dyeing of Dacron*. With this high-quality non-toxic carrier you get the maximum exhaustion and color value from your dyes without adverse effects on light-fastness, wash-fastness, crock-resistance, or hand.

BEING EVALUATED BY THE TRADE:

CLORMATIC #2

Carrier and levelling agent. This new liquid product, which is particularly easy to handle, is not only an excellent carrier but also extremely effective as a levelling agent in the package dyeing of yarn.

CHLORINATED BENZOIC ACIDS

2,4-dichlorobenzoic acid and 3,4-dichlorobenzoic acid are noted for the exceptional dye bath exhaustion which they bring about as carriers even in very low concentrations.

Samples and Technical Data on Request.

*Du Pont's trade-mark for its polyester fiber.

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Editorial Articles
and the Advertisements

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for March are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

A quill polisher, a new machine designed to be fed from a Terrell stripping machine, is described in a leaflet from Glenwood Machinery Associates, Inc. The machine has a three-station processing cycle to give quills clean grooves and high luster. **(F-1)**

A permanent-pleating machine is described in a brochure from Robert Reiner, Inc. The machine has a working width of 59¼ ins. and makes flat, box, and group washproof pleats in knitted and woven nylon, Dacron, Orlon, and other synthetic fabrics. **(F-3)**

A crystal-pleating machine is described in a brochure from Robert Reiner, Inc. This machine is used for making small vertical pleats that are inclined in the same direction for easy sewing. Pleat depths range from $\frac{1}{4}$ to $\frac{1}{2}$ ins. **(F-5)**

Air-cooled electric transmitters for sewing machines are described in a folder from Singer Sewing Machine Co. The new motor has high acceleration and the new Singer clutch. It is easy to mount and is completely enclosed. **(F-4)**

Side-register control systems for slitting, rewinding, side trimming, and printing are described in a bulletin from General Electric Co. Drawings show how the photoelectric system works to increase production, reduce waste, and improve quality. **(F-5)**

Centralized lubrication is the topic of a bulletin from the Farval Corp. Typical applications of centralized lubrication to save time, labor, power, bearings, and lubricant are described. **(F-6)**

Protected mercury switches designed for use where ordinary glass-tube mercury switches can be damaged are described in a data sheet from Minneapolis-Honeywell Regulator Co. The epoxy casting resin provides chemical resistance. **(F-7)**

Motor-frame selection charts are available from Westinghouse Electric Corp. The wall charts compare the old and new NEMA standard dimensions for 1- to 30-hp. a.c. motors. **(F-8)**

Edge position control for web-guiding jobs is the topic of a bulletin from Askania Regulator Co. Diagrams show how the sensing nozzle, jet-pipe regulator, and cylinder work to position textiles for printing, slitting, winding, tentering, and examining. **(F-9)**

Heavy-duty needle bearings are described in a catalog from The Torrington Co. The catalog covers design features, bearing selection, sealing, and lubrication. **(F-10)**

Multipoint chart recording is discussed in a bulletin from Robertshaw-Fulton Controls Co. The device gathers operating data from 24 different sources and logs the information on a single circular chart. **(F-11)**

A pneumatic thermometer controller is described in a bulletin from Minneapolis-Honeywell Regulator Co. The controller is used in slasher rooms, dyehouses, and storage operations that require precisely controlled temperature. **(F-12)**

Electric-motor frames for the new NEMA a.c. frame assignments are described in a chart from Reliance Electric & Engineering Co. The chart shows how the dimensions of the Series C motors compare with the new NEMA frame assignments. **(F-13)**

Pressure leaf-type filters are described in a brochure from American Machine and Metals, Inc. Sizes, capacities, and dimensions for vertical and horizontal filters are listed. Applications and advantages are given. **(F-14)**

CHEMICALS AND SUPPLIES

Bleaching with peroxide chemicals is described in a bulletin from Buffalo Electro-Chemical Co., Inc. Cold bleaching, continuous bleaching, and the uses of hydrogen peroxide, peracetic acid, and ammonium persulfate are described. **(F-15)**

Wetting agents are the subject of a bulletin from American Cyanamid Co. Various agents are listed with their properties and applications for desizing, kiering, dyeing, printing, finishing, the Sanforized process, aftertreating, and carbonizing. **(F-16)**

Plasticizers for polyvinyl acetate films are described in a bulletin from Atlas Powder Co. Eight tables give such data as chemical and physical properties of the plasticizers, comparative resistance to water spotting, and comparison of viscosity. **(F-17)**

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Reader Service (Continued)

Insulating ideas are discussed in a booklet from Libby-Owens-Ford Glass Co. Charts show sound absorption and insulating qualities of glass fiber and give weights, densities, and limitations of various thicknesses. **(F-18)**

Glass blocks are described in a catalog from Pittsburg Corning Corp. Information on physical performance, technical data on light transmission, insulation values, installation details, drawings, and accessory materials are given. **(F-19)**

Vulcanized fiber is described in a catalog from Continental-Diamond Fiber Co. Technical data includes information on tensile, flexural, shearing, impact, compressive, and dialectric strengths; water-absorption rates; and Rockwell hardness. **(F-20)**

Adjustable V-belts that are easy to couple and uncouple are described in a catalog from Manheim Mfg. & Belting Co. Typical applications of the rubber-coated belts are illustrated, and the uncoupling procedure is shown. **(F-21)**

Heat insulation is the topic of a brochure from Owens-Corning Fiberglas Corp. The physical characteristics of pipe insulation and heat-insulating blocks are given along with typical applications, K factors, standard sizes, thicknesses, and forms. **(F-22)**

Pipe insulation is the subject of a folder from Pittsburgh Corning Corp. On-the-job installation photographs point out the advantages of cellular-glass insulation for pipe temperatures between −300° and+800° F. **(F-23)**

Guides, rollers, and eyelets are described in a leaflet from Heany Industrial Ceramic Corp. These guides are made from a new material in a variety of sizes and styles. Acids and alkalis have no effect on the guides. **(F-24)**

A plastic coating that is easy to apply for protection on gears, sprockets, shafts, and rods is described in a bulletin from Fidelity Chemical Products Corp. The parts to be protected are dipped into a melting pot and allowed to cool. **(F-25)**

Engineering and Maintenance

Control systems for furnaces, ovens, and dryers are described in a catalog by The Bristol Co. Electronic potentiometers, pyrometer controllers, recorders, indicators, and bulb-and-tubing recording or controlling thermometers are described. **(F-26)**

Gear motors are described in a booklet from Westinghouse Electric Corp. Features of the gear unit and motor are discussed. Gear ratios for single, double, and triple reduction types are given with gear-motor designs for special requirements. **(F-27)**

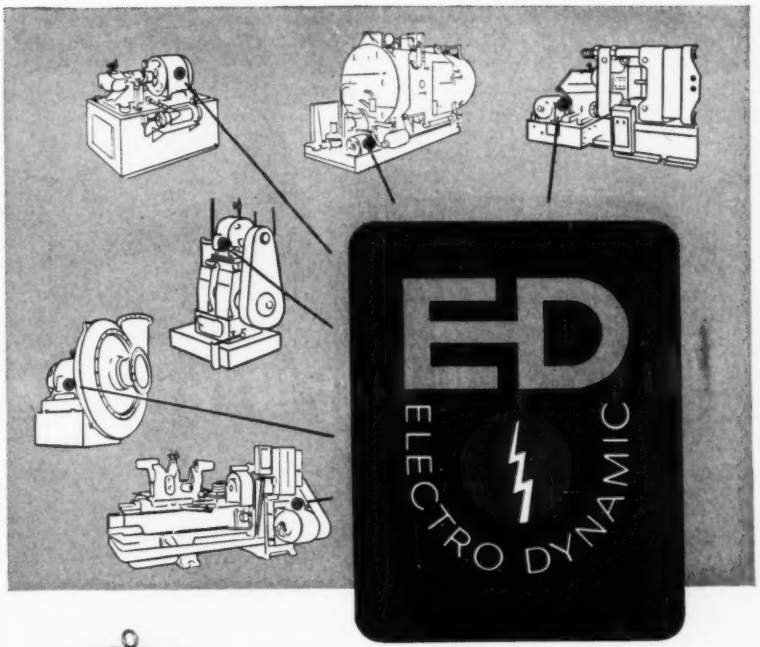
Radiant-heat panels are described in a brochure from Thermomat Co. Inc. These panels are custom made to specific widths and lengths to meet equipment requirements and to match operating voltages. Uniform heating temperatures are maintained to 700° F. **(F-28)**

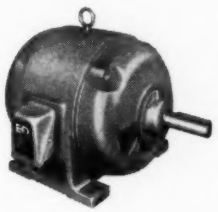
Chlorine-gas feeders for sewage chlorination are discussed in a release from Builders Providence, Inc. Information is given on types of chlorination, points of application, modes of control, types of feeders, and locations for equipment. **(F-29)**

Liquid-level gauges are described in a bulletin from Jerguson Gauge & Valve Co. These gauges, of the transparent type, are used on boilers, tanks, and other liquid-containing equipment for accurate reading of liquid level, color, and density. **(F-30)**

Better cooling in rolls is described in a bulletin from F. R. Gross Co. Flexible rubber ribs direct the flow of the cooling water and make it spiral at high velocities and efficiency past the surface to be cooled. **(F-31)**

Electronic level controls with no moving parts are described in a bulletin





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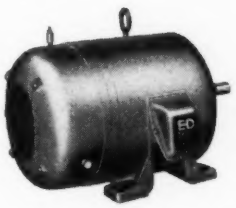

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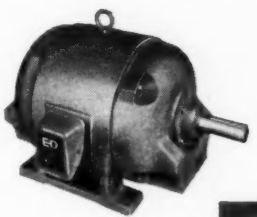
*Tests certified by J. Arthur Balmford, Professor of Electrical Engineering at a leading Eastern university.



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HOW TO SUCCEED WHILE YOU'RE STILL YOUNG

IT SURPRISES many people to learn that the average age of the men who respond to our advertisements is closer to forty than to twenty. But it's not hard to understand why this is true!

Most young men are *satisfied* with their progress in business. Their native ability and energy are enough to win them regular promotions and salary increases. They find success only a matter of time.

But the day comes, often with a shocking suddenness, when this easy and casual progress ends abruptly.

Many a man wakes up with a start in his thirties or forties to find that his income has leveled off, and that promotions have ceased.

"I'm not getting ahead as fast as I should," he says to himself. "Where am I going to be ten years from now?"

Why does this pathetic pattern appear in so many promising careers?

The answer is simple: Sheer ability and energy can carry a man to the mid-way point in business . . . *but only a thorough knowledge of business fundamentals can help him beyond that point.*

If you realize that fact while time is still on your side—and act on it—*you can succeed while you're still young.*

FREE . . . "FORGING AHEAD IN BUSINESS"

We do not claim that you must have the Alexander Hamilton Course in order to succeed in business. But we do say that *you cannot succeed without what is in the Course!*

All the Institute does is offer you a convenient and time-saving means of bringing this knowledge to you in your spare time; and in a form that has *proved* to be practical and effective for more than forty years.

So that you may judge for yourself whether or not you think the Institute can help you, we have published an informative 48-page book titled "Forging Ahead in Business."

We believe that this little book will help any man get down to bedrock in his thinking; however, there's no cost or obligation for it because—frankly—we've never been able to put a price on it that would reflect its true value. Some men have found a fortune in its pages.

If you would like a complimentary copy of "Forging Ahead in Business," simply sign and return the coupon below. It will be mailed to you promptly.

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Reader Service (Continued)

from Robertshaw-Fulton Controls Co. Only a single radio tube is employed, and the instrument provides control to $\frac{1}{8}$ in. of liquids and divided solids. **(F-32)**

"How to Make Power-Plant Cleaning Easier" is the title of a booklet from Oakite Products, Inc. The booklet, based on the experience of 200 technical representatives, discusses power-plant cleaning, descaling, and paint-stripping problems. **(F-33)**

Indexing mechanisms for automatic, remote index setting of pneumatic controllers are described in a bulletin from Minneapolis-Honeywell Regulator Co. The mechanisms are used for processes with large time lags or quality variations in the controlling medium. **(F-34)**

Stopping rust is described in a catalog from Rust-Oleum Corp. The catalog features 94 color clips and instructions for surface preparation and application of primers, finishers, sealers, thinning oils, and floor and masonry coatings. **(F-35)**

Precipitators are described in a booklet from the Permutit Co. The precipitator offers an efficient means of removing impurities from a liquid by precipitation, absorption, settling, and filtration. The unit requires less space, chemicals, and reaction time than other designs. **(F-36)**

Electronic controls for hot-water heating systems are described in a catalog from Barber-Colman Co. The ratio of change in outdoor temperature to change in water temperature can be adjusted by turning a knob. Information on an optional night-depression feature with morning warm-up is given. **(F-37)**

"Fan Engineering Data" is the title of a new brochure from Hartzell Propeller Fan Co. Fan installation is discussed with maintenance and lubrication, fan laws and formulas, terms and definitions, recommended velocities for exhaust hoods, and air-pressure conversion tables. **(F-38)**

A viscosity-measuring system is explained in a report from The Foxboro Co. The equipment consists of viscometer transmitting electrical measurements of viscosity to an instrument that indicates, records, controls, or actuates an alarm. **(F-39)**

Micro switches are described in six data sheets from Minneapolis-Honeywell Regulator Co. Various types of switches are described with their characteristics, contact arrangements, design, and price. Lever actuators, roller-plunger switches, double-pole, double-throw switches, and magnetic blowout switches are described. **(F-40)**

A chain-oiling system is described in a bulletin from Oil-Rite Corp. The single-line system consists of a central oiler that feeds one or more valve-brush assemblies connected in a series with copper tubing. It is used for oiling one or more individual chains from a single reservoir. **(F-41)**

General

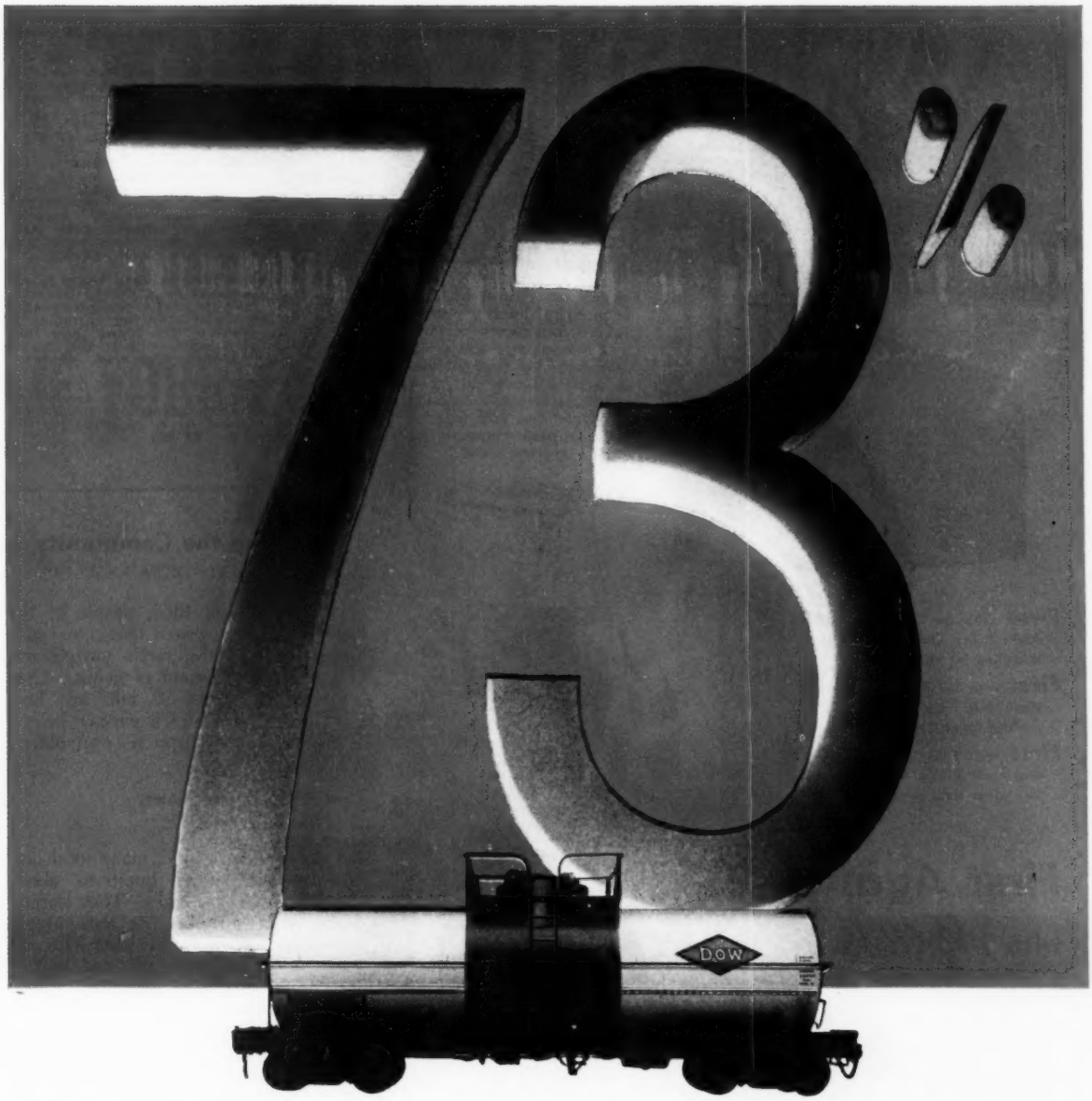
Shop stools and chairs are described in a bulletin from Standard Pressed Steel Co. Steel stools in knock-down, adjustable, filing, and revolving-seat models are described. Other seats in any desired height are in pressed-wood-covered steel, round wood, and shaped plywood. **(F-42)**

A lift truck of 4,000-lb. capacity with trunion-mounted steering and pneumatic tires is described in a catalog from Hyster Co. Specifications and operating data are included in the catalog. **(F-43)**

Fire protection is the subject of a bulletin from Stop-Fire, Inc. Automatic sprinkler-type fire extinguishers are designed to permit quick and economical installation of fire protection directly over fire hazards. No piping is required on the unit suspended from the ceiling. **(F-44)**

"Know Your Wool Facts" is the title of a revised index from the Wool Bureau, Inc. This book is a guide to educational aids on wool and wool products. Booklets, pamphlets, books, teaching aids, exhibits, and displays are listed. **(F-45)**

DOW



DOW CAUSTIC SODA

If you haven't figured your caustic costs recently, you may be pleasantly surprised at the economy 73% can bring. Increasing freight rates are erasing the savings in 50% caustic solution for more and more users every day—they're probably doing the same for you.

If you'd like help in figuring the most economical caustic for your plant, our Alkali Sales Department will gladly lend a hand. THE DOW CHEMICAL COMPANY, Midland, Mich., AL 900E.

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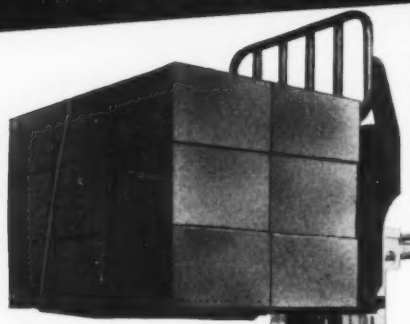
First Again!

Mobil-Matic MOBILIFT

with OIL-SMOOTH Constant-Mesh Transmission

Engineered Especially for FORK TRUCKS



For years Mobilift users have benefited by Mobilift "firsts". Mobilift consistently sets the trend in bringing engineering progress to the field of fork lift trucks. Every part of a Mobilift is designed and built for rugged use and to give maximum performance at the lowest operating costs.

First with an Oil Immersed Multiple Disc Clutch especially designed for fork trucks.

First with Lev-R-Matic — No Gear Shift... No Clutch Pedal ...ONE-Lever Control.

First with FREE LIFT to give maximum lifting height before inner mast raises.

First Again!

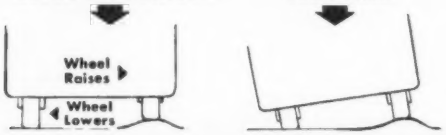
with *Mobil-Matic* DRIVE

The oil-smooth, high and low range, constant mesh transmission with fluid coupling to the Chrysler 6-cyl. engine. There's *NO CLUTCH PEDAL — just ONE direction selector lever.*

First with HYDRA-LIZER

The hydraulic equalizer on the steering wheels for *cross-compensating* truck and load over bumps...

GIVES YOU THIS... NOT THIS



MODEL D-424

4,000-lb. cap. at 24" Load Center. 83" Mast, 128" lift, 64" Free Lift.

And FIRST with ONE-PIECE HOOD that raises easily for full access to engine compartment.

WRITE TODAY for complete details on the New Mobil-Matic MOBILIFT or contact your nearest Lamson-Mobilift office.

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lets, pamphlets, books, teaching aids, exhibits, and displays are listed. **(F-45)**

"Basic Planning for Plant Modernization and Expansion" is a study from Walter Kidde Constructors, Inc. A step-by-step procedure for analyzing existing facilities to establish the products to be made and the equipment required is outlined. **(F-46)**

Novelty yarns in cotton, wool, worsted, rayon, and synthetics are described in a booklet from Philadelphia Penn Worsted Co. Chenille, frill, loop, boucle, nub, ratine, splash-and-seed, and slub yarns are illustrated and described. **(F-47)**

"Textile Mill Cleaning Guide" is obtainable from Oakite Products, Inc. The booklet discusses textile-washing operations, equipment-cleaning procedures, and humidifier maintenance. Instructions for cleaning bobbins, cork cots, hosiery forms, jacquard-loom heads, and textile machines are given. **(F-48)**

A vibration-free balance table is described in a leaflet from Fisher Scientific Co. The trend to smaller samples makes the importance of reducing variables in weighing greater. The plans show how to build the balance support and mount it on a firm load-bearing wall. **(F-49)**

Long-range planning is the subject of a leaflet from Barnes Textile Associates, Inc. A capital program with specific objectives is said to be a necessity for future security. **(F-50)**

Exploring the Community

CONTINUED FROM PAGE 135

For the first time, people of the little town recognized that actual cash money from the mill's payroll was part of their current of living. They could see in the $2 bills just how frequently the mill's payday helped the community meet its own obligations.

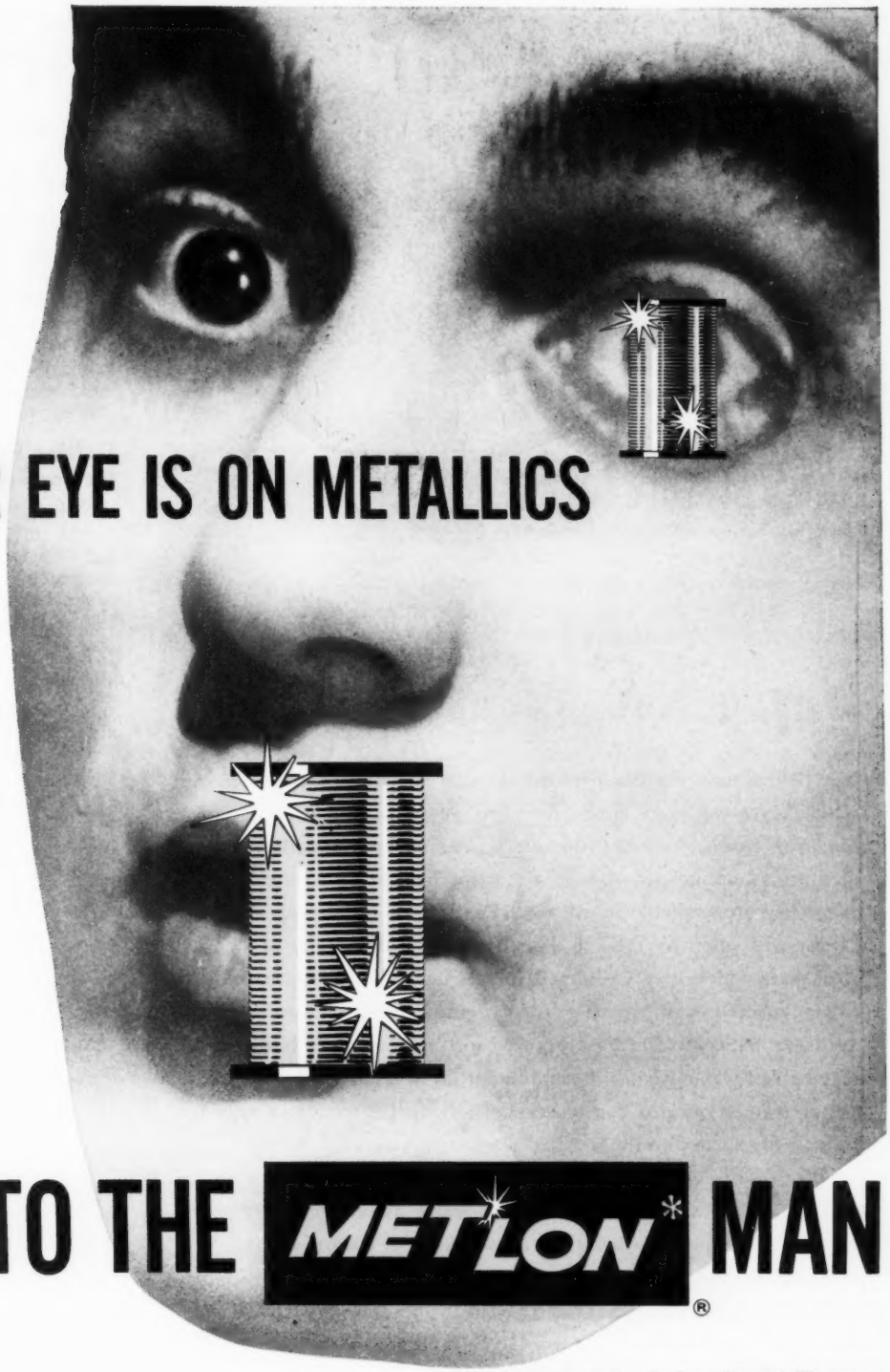
Mill's Link to Town Is Dramatized

For the first time, many local citizens asked other questions about Eastman Cotton Mills. They learned that the mill owns its water-supply system and provides water for all homes of employee families; that it owns and maintains nearly 100 houses, some of which have just recently been built, for its employees; that the mill takes an interest in local schools, and until a short time ago, when city and county arrangements supplanted the mill's elementary school, it had conducted a fine school for the village children.

With the $2 payroll, Eastman and Eastman Cotton Mills found a strong bond of economic understanding. The movement has created the type of friendship that is the basis for real community relations. From now on, there will be other drives and other ways in which the mill and the town will cooperate to keep this bond strong.

But this simple method of identified payroll can be tried out with equal success in other communities. It is simpler than most drives intended

to point up the value of a mill to a



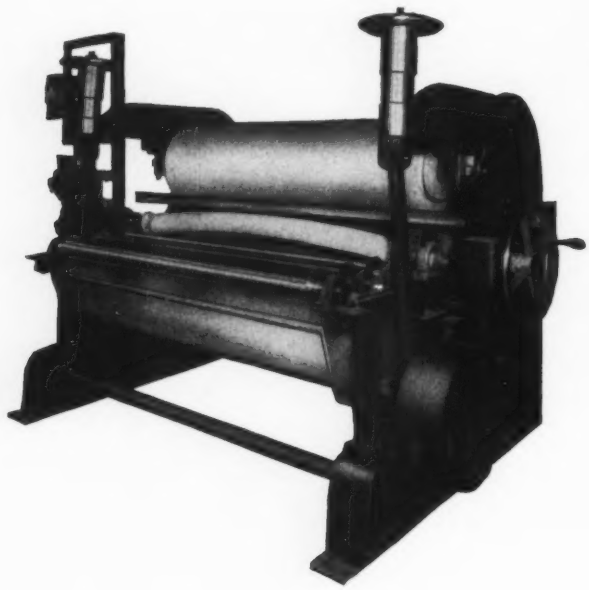
IF YOUR EYE IS ON METALLICS

TALK TO THE METLON* MAN

Metlon has a reputation for knowing metallic yarns. Our sales engineers are specialists; they know what can and has been done with metallics. They also know what can't be done. More important, they are as near to you as your telephone (or mail box). Just phone (or write) Metlon, and you'll be getting the best metallic know-how in the country, without cost or obligation.

*** *the non-tarnishing metallic yarn***

Metlon Corporation, 432 Fourth Ave., New York 16, N. Y., Tel.: MU 3-5962
A Division of Acme Backing Corporation



Why a New Padder?

You'll find authoritative, detailed, definite answers when you consult with Tower engineers. To answer this question, to a degree; Tower Pads for modern pad and mangle processing are versatile machines of practical designs, built with either mechanical or pneumatic loading. They are available in all widths with two or three squeeze rolls, carrier and emersion rolls as desired, and a wide variety of stainless steel pans which may be hinged for easy cleaning. Squeeze rolls are rubber covered to suit specific applications; stainless steel rolls are also available. Squeeze rolls are supported in spherical roller bearings and may be easily removed without dismantling the machine. Side frames are of modern welded construction. Individual micrometer type setting arrangements assure accurate pressure application. Safety knock-off at nip is optional on all models. Whether your requirements are for a single textile roll or a complete Pad Steam dye range, Tower engineers are promptly available for consultation to custom engineer the units you're interested in to do your job more efficiently. Your inquiry will be answered courteously and promptly.

TOWER IRON WORKS

50 BORDEN STREET, PROVIDENCE 3, RHODE ISLAND

TEXTILE DIVISION

Sales Representative L. C. STOWELL *Engineering Company, Charlotte, North Carolina*

to point up the value of a mill to a town, yet dramatic enough to get immediate community-relations results.

Looper-Training Method

CONTINUED FROM PAGE 99

completion of each exercise and used again.

The correct method of turning the toe is demonstrated by the instructor and soon the learner is successfully looping socks. After some stamina-building exercises, she is then able to take her place in the production line.

Plotting Results Increases Production

During this stage, trainees are taught to time themselves against a certain target and plot their results on graphs. A competitive spirit between learners soon exists, and each learner begins to appreciate her progress.

In a few weeks' time she reaches 100% production without going through the plateau stage that generally occurs during training.

This period of doldrums that usually faces the looper trained by conventional methods causes some loopers to quit at this stage and causes loss to the manufacturer in training outlay. The new method irons out this plateau stage, increases morale, reduces training time, and saves training-pay loss that results from workers who don't make the grade.

Waste and Cleaning Tips

CONTINUED FROM PAGE 123

of the yarn and the type of drafting arrangement. Each mill has to work out its own program, but here is a guide for a department spinning 24s to 36s high-quality carded yarn.

The following work should be performed every 100 hrs.:

1. Clean pivots of top rolls
2. Clean bottom rolls and drafting aprons
3. Clean and lubricate top front rolls
4. Clean back traverse guide
5. Clean cap bars and nebs
6. Clean top clearers
7. Clean spindle rail
8. Clean motor and frame end
9. Change the travelers

Enough people—three or four—should be assigned to a cleaning gang to perform this work in about ¾ hr. This cleaning gang should be com-

Can't rust out! no cracks or crevices . . . no place for rust to get a foothold . . . seamless, one-piece housing with unbroken surface of "Life-Time" Porcelain Enamel!

No service breaks due to humidity!

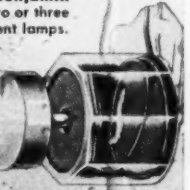
poor lamp-starting eliminated . . . electric contacts protected from corrosion . . . light-reducing dirt sealed out

Benjamin "Vapor-Tite" Units make it possible to provide modern fluorescent lighting for locations with moisture-laden atmospheres. They are specifically built to combat the corrosive effects of such humid workplaces as textile mills, laundries, bottling plants, food processing operations, etc. A solid armor of porcelain enamel defies humidity, steam, dirt and vapors. This is the "Life-Time" surface that cannot wear, scratch, become dull, deteriorate or corrode because it is literally "glass fused to steel".

In addition to the humidity-defying features described above, this unit is equipped with the patented Benjamin "Springlox" Lampholder... famous for "easy-in, easy-out" lamp servicing and completely safe operation in humid atmospheres. After 1,000 hours in 95% humidity at 95° F., and after 400 hrs., under a continuous salt spray, "Springlox" was still in operation! Get up-to-date information on fluorescent lighting that defies humidity... ask for Bulletin VT. Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Ill.

7B-261

available with this exclusive **Benjamin "Springlox" Lampholder** for two or three 48" bi-pin or single-pin fluorescent lamps.



BENJAMIN

"VAPOR-TITE"

Sold exclusively through electrical distributors

A Product of Benjamin Electric Mfg. Co., makers of famous Benjamin and Leader Line Lighting Equipment and Sound Signals for Industry, Institutions and Commerce.

At 15,000 RPM
Balance is Vital

Todays winding and twisting bobbins for Nylon and other tenacious yarns run up to 15,000 RPM . . . almost double the top speeds of 10 years ago. At these tremendous speeds a bobbin which is not properly balanced can become a very expensive investment.

Balance is vital because even the tiniest variation in materials, machining, or assembly results in undue spindle and machine wear, and in uneven wind. Since much of this damage is done before the defect becomes noticeable to the naked eye, it will pay you to standardize on EPI Bobbins, because every EPI Bobbin is dynamically tested and balanced before it is shipped.

Write, wire, or call for full information on how the EPI Bobbin saves on spindle and machine maintenance and produces better packages.

STRENGTH

Concentric construction and the patented* EPI Expanding Lock Ring Assembly give EPI Bobbins unexcelled strength to resist the crushing force of tenacious yarns.

New England Representative: J. H. Windle, Jr., 231 S. Main St., Providence, R. I.

*U. S. Patent 2,625,343

Visit Our Booth at the American Textile Machinery Exhibition

ENGINEERED *Plastics*
INCORPORATED
Gibsonville, North Carolina

posed of the less skillful workers and should serve as a supporting crew to the scouring gang and overhauling gang.

Cleaning should proceed according to the plan sketched. One frame in each operator's assignment should be cleaned in sequence, and this order should be followed until all frames are cleaned. In this way, a more or less equal workload is maintained, hanks per spinner are not substantially reduced, and end breakage is kept nearly equal.

Warp Replacement

CONTINUED FROM PAGE 117

in the beam locks. The paper covering is removed from the yarn, and the yarn is pulled off the beam until the masking tape is near the drop wires.

2. A wooden clamp is fastened to the yarn just inside the masking tape toward the beam. The yarn (about 48 ins.) is cut off near the tape. This yarn is placed in a paper tube on the loom march to be used for weavers' piecing ends.

3. The yarn is rolled around the clamp up to the lease twine, and the clamp is laid against the end of the yarn from the old beam.

Painstaking Care Positions Every Individual End for Tying

To put the new yarn on the tying-in-machine frame:

1. The black-colored roller of the machine frame is positioned over the loom whiproll.

2. The yarn is wound around the rotary brush on the frame a little over a full round to hold the yarn secure.

3. The lease twine is replaced with oval-shaped wooden lease sticks.

4. A comb is put in the yarn directly over the whiproll and fastened against the comb with the machine-frame clamp.

5. The nylon lease twine is placed through the holes at one end of the lease sticks. The lease sticks are pulled out to insert the nylon lease twine.

6. The rotary brush is tightened to give the yarn medium tension, the comb is slid back to the rotary brush, the yarn is clamped in the machine frame near the rotary brush, and the comb is removed. The end of the yarn is cut off at the machine-frame clamp. Then the warp beam is turned slightly to slacken the yarn.

To put the old warp yarn in the tying-in-machine frame:

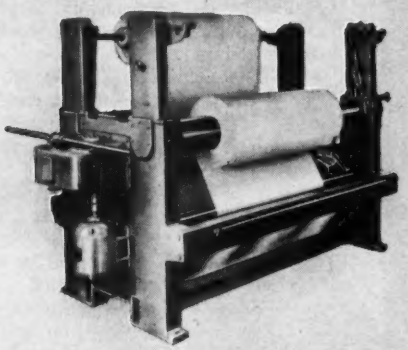
1. The end of the yarn is rolled around the rotary brush.

2. The lease sticks are pulled back

Blueprint for Profit

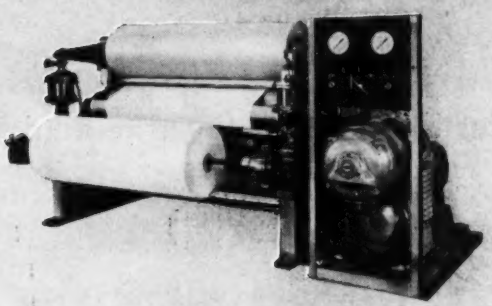
The competitive market of today calls for careful planning by management to assure profits on each operation, through better production with sustained quality of processed fabrics. Processing equipment which delivers greater production without sacrificing quality is a must.

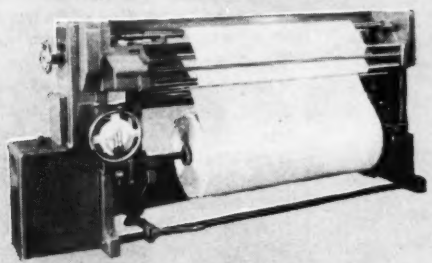
For over 53 years of building for the wet processing industry Van Vlaanderen has set the standard with equipment ruggedly built and designed to give sustained trouble-free operation with high quality work. Consult us for a single machine or an entire plant.



PROFIT-MAKING JIG—The V.V. 888 (left) is now the standard for sustained production, quality performance and trouble-free service in many dye plants. It features silent worm-type drive, operating in oil; drag-free multiple dry-disk friction clutches; clean, enclosed roller chains. Widely spaced roll centers permit large batches. Other quality features: massive, vibration-free frames of cast iron; stainless steel tank with side overflow; oscillating expander; stainless steel batch rolls, mounted on anti-friction bearings and malleable iron brakes.

PROFIT-MAKING PADDER—The V.V. Heavy Duty Padder (right) is for modern resin impregnating, finishing and dyeing. Correct design and rugged construction insure quality work and long life. FEATURES: slip clutch take-up, with friction-plate clutches; variable speed drive; malleable iron brakes; pneumatic pressure controls each cylinder separately; stainless steel guide rolls; easily removed padder rolls on anti-friction bearings.





PROFIT-MAKING TUBER—The V.V. Tuber (left) handles most fabrics, including those that benefit from tensionless processing. FEATURES: uniform package density as set by operator; constant cloth speed to 200 Y.P.M.; accurate measurement through driven measuring drum with minimum tension between let-off and drum; a better package with even selvages; easy loading and operation; non-slip, long wearing 1 yd. measuring roll; easily operated selvage control.

SEE US AT THE SHOW—Be sure to visit us at the American Textile Machinery Exhibition; Atlantic City Auditorium, April 26-30. The eight booth showing of V. V. machines will feature a new rolling and friction calender, a combination examiner-tuber, a new embossing machine and the versatile Dyemaster Jig as well as other advanced machines.

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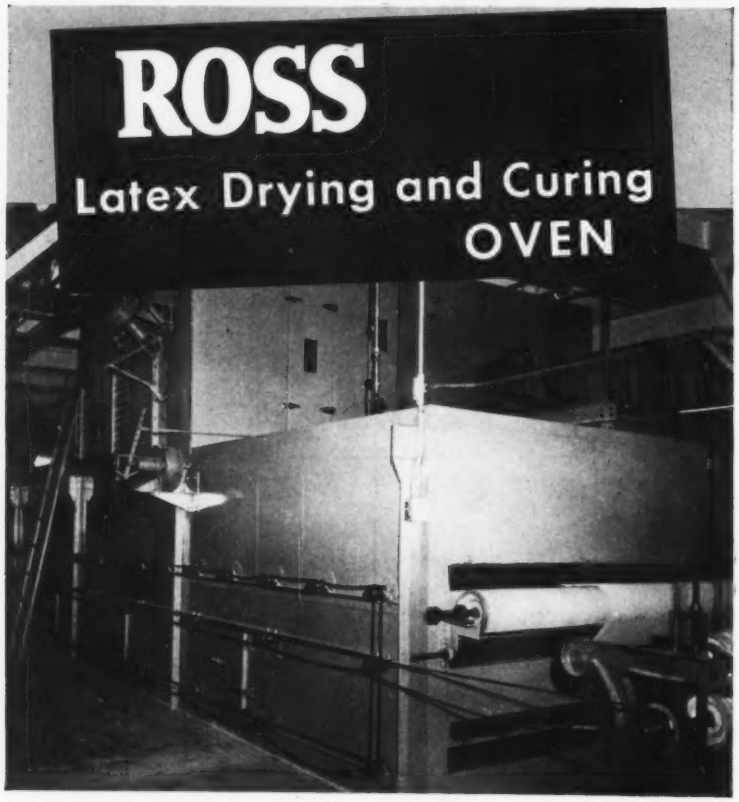

faster drying of latex backing on cotton rugs

Recently installed at the Tifton Rug Co., East Point, Georgia, the ROSS 3-pass, gas fired oven shown above uses the new ROSS "cross air nozzles" to achieve speeds in excess of 20 FPM. Major features of the ROSS Latex Drying and Curing Oven are:

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Look for the NEW ROSS "HOT AIR SLASHER"
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to a position near the whiproll, and a comb is put in the yarn near the lease sticks.

3. The machine-frame clamp is put in the yarn against the comb.
4. The lease sticks are removed to put in the nylon lease twine.
5. The yarn is tightened by turning the rotary brush, and the comb is moved against the brush.
6. The yarn is clamped in the machine frame near the rotary brush, and the end of the yarn is cut off.

Tying-In Machine Runs Itself When It's Set Up

To tie the warp:

1. The rotary brush is removed from the machine stand.
2. The tying-in machine is placed on the track (the top of the machine-frame clamps).
3. The nylon lease twines are fastened to the frame on one end; the other ends are threaded through the machine with a hook and clamped in the machine.
4. The machine cord is plugged into a 120-v. electric outlet at a roof-supporting column.
5. The machine is started by turning the handwheel by hand a few turns to check the tying of ends.
7. The switch is turned on, and the warp is tied at 300 ends per minute.

If the operator has another warp out that he can prepare for the tying-in machine, or if he has to operate the drop-wire machine, he cuts the speed of the tying-in machine to 200 ends per minute and leaves the machine operating by itself while he does his other work. There's no danger of spoiling a warp because the machine stops itself if an end breaks.

After the knots are tied, the operator removes the machine and starts it operating on the next warp to be tied. The second warp has been prepared on an extra machine frame. Then he comes back and pulls the knots through the drop wires, harnesses, and reed. To pull the knots over, he slips the beam projections out of the worm wheel and pulls the warp over while it's slack.

A smash hand draws in broken ends, if there are any, and restarts the loom.

The time required to retie a warp is: (1) 18 to 20 mins. to prepare the machine, (2) ends tied at 300 ends per minute when the operator is with the machine and 200 ends per minute without attention, (3) 10 to 12 mins. for removing the machine frame and pulling over the warp.

As an example of the time required to completely tie a warp: an 8,900-end acetate warp takes about 57 mins. The average number of

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ends tied per hour of steady tying is 6,000. The speed record at Toscony is 88,000 ends tied in an 8-hr. day by one man. The number of warp ends on most styles of cloth run from 8,000 to 14,000.

Drop Wires Are Not Placed On Drawn Warps in Drawing In

Drawing in is a normal operation at Toscony except that no drop wires are placed on the warp ends when the warps are drawn. The drop wires are added later with an automatic drop-wire machine (Uster dropper-pinning machine).

Drawn warps are placed in the loom without drop wires and tied down. Ends broken in tying on the warp are replaced and the warp is leased by the tying-in-machine operator with the same methods used to lease "tie-backs."

The drop-wire-machine frame is positioned with the black roller over and inside the loom whiproll and set up with the same general methods used to prepare warps for the tying-in machine. The frame is prepared to receive either four or six banks of open-end drop wires.

Then the drop-wire machine is placed on the frame and started. The machine separates the ends one at a time from the body of the warp and drops a drop wire on each end at the rate of 300 drop wires per minute.

The operator watches the electric-driven machine and keeps drop wires hung on the guides where they're automatically fed into the machine.

When all drop wires are dropped on the ends, the operator removes the machine, places the warp-stop-motion contact bars through the drop wires, and removes the stand.

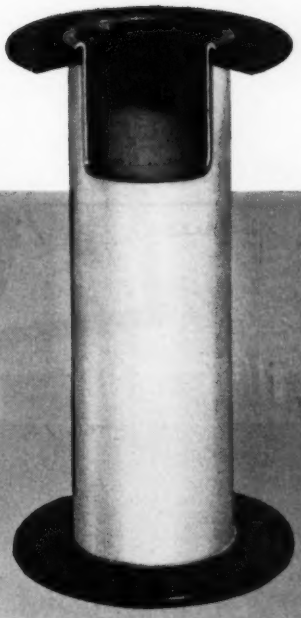
Time requirements for placing drop wires on looms with the machine are: (1) preparing the warp and positioning the machine frame, 5 to 7 mins.; (2) dropping the drop wires, 300 per minute; (3) replacing the contact bars and removing the machine and frame, 8 to 10 mins.

The main advantage of the drop-wire machine is that drop wires can be placed on the warps with the machine faster than they can be drawn in by the drawing-in hands. Other advantages are that there are fewer ends broken when drawn warps are placed in the looms, and drop wires and ends cannot become crossed.

Placing Drop Wires on Warps At Looms Saves ¼¢ per Yard

Both the tying-in machine and the drop-wire machine are operated by the same person. Two machine operators, one to a shift, replace all warps on Toscony's 256 looms. The two oper-

REDUCE COSTS, IMPROVE THE WINDING OF ALL SYNTHETIC YARNS



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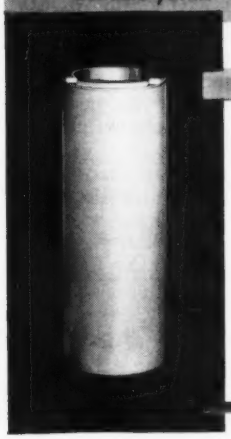
Constructed without screws, the Spaulding Bobbin cannot become loose or fall apart in service. Location of the aluminum tube provides a large head connection diameter to resist yarn pressure. It also prevents barrel crushing and effects maximum load distribution.

Smooth, vibration-free operation cuts spindle wear and machine maintenance costs. Long-life construction reduces replacement expense. Even loading and snag-proof finish assure proper winding without damage to the most delicate yarns.

*Spaulding Patent



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ators work overtime to take care of warp replacements on the third shift, when it's necessary. The normal number of warps replaced, both tied and drawn, is 65 per week.

The tying-in machine has been used at the mill for a little over 3½ years; the drop-wire machine has been used a little less. Before the tying-in machine was bought, warps were twisted at the loom, and as a result, machine operators without previous experience had to be trained.

Hermas Morissette, the first-shift machine operator, was a weaver before he learned to operate the machine. He stayed with a representative of Uster Corp. about a month to learn to operate and service the machine, and now he and the other operator operate the machine and keep it repaired without help.

When the drop-wire machine was bought, the operator stayed with the service man again for about a month. Since that time, he and the second-shift operator have handled the machine by themselves.

Other results of the warp-replacement program are:

1. Cloth is woven ¾¢ per yard cheaper than it was woven when warps were hand-twisted.

2. Cloth is woven another ¼¢ per yard cheaper than it was woven when drop wires were hand-drawn.

Composition Rub Aprons

CONTINUED FROM PAGE 96

aprons, rows of riveted leather buttons grip the roller to prevent lateral slipping. To prevent the rivets from becoming loose, the canvas backing is built up with bias-cut strips of varying widths. The step-down construction gives a good bond and prevents cracking between the surface facing and the canvas backing. As a further precaution, the composition facing is built up higher than the reinforced edge, which keeps the apron edges from rubbing together.

Aprons Last Over Two Years

Depending on the number of shifts running, the maximum life of the composition aprons is between two and three years. Mr. Galinat reports an average running life of around 2½ years.

One cause of apron failure is a waste end winding around the end of the apron and causing the buttons to tear and the apron to stretch. The Thompsonville plant has found that it's best to discard the apron when such damage occurs. To minimize this

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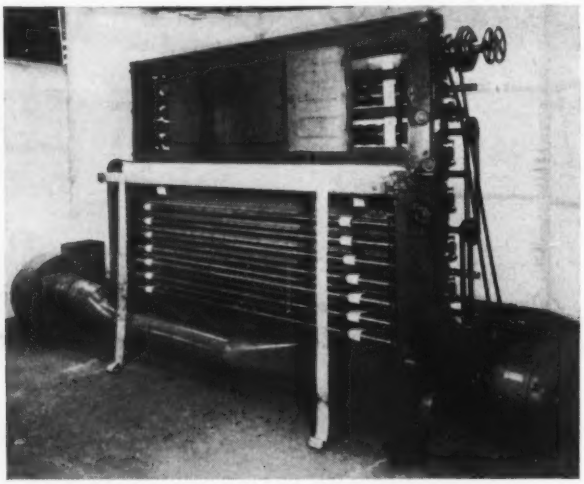
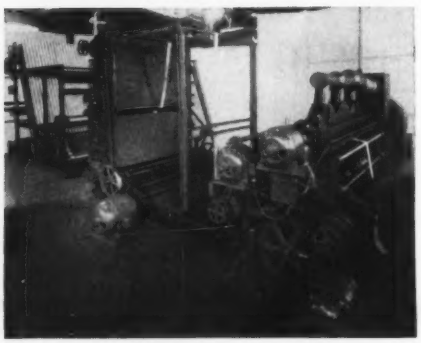


AS A SEPARATE OPERATION



OR TANDEM WITH SHEARING RANGE

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kind of accident, a suction pipe takes the waste end off.

If the aprons are set too close, they will heat and swell. The Thompsonville plant uses a No. 24 card gauge to set the aprons; at this setting, they don't heat up and the roving gets enough rub to be handled by a spindle.

The setting is checked by looking at the roving on the spools. As the aprons wear, the setting is maintained. When the aprons wear down close to the canvas, they don't produce the same rub, and at this point, the aprons are replaced. A caution in replacing aprons is to tighten them enough to be taut but not enough to make the aprons wrinkle. It takes about five days to break in a new apron.

The aprons are washed right on the cards between color changes or about once a week (40-hr. week). A solution of Oakite and water is sprinkled on from an oil can with a spout, and stock is run through to clean off the aprons. This procedure, however, is recommended only with carpet stock.

Roving Stop Motion

CONTINUED FROM PAGE 89

space. The top strip was grounded to the frame at one end, and the live wire was connected to a 12-v. circuit through a switch.

The stop-motion wires were adjusted to align the eye with the front-roll nip and the flyer top. Long wires, therefore, are for the front spindles and short wires for the back spindles; and the wires are alternated along the breastbeam.

The hank roving determines the wire size, and the range is from No. 15 to No. 40 wire. Woodside uses No. 30 wire for 1.0-hk. roving. Lighter roving requires a smaller-diameter wire.

A transformer for the signal light and one for the stop motion step the voltage down from 550 v. to 12 v. and are contained in a box screwed to the main switch. Both circuits are fused.

Operator Now Has More Spindles

Work assignments have been reallocated since the stop motions were installed, and the number of spindles per operator has been increased. Some cleaning operations have been taken from the roving tenders, but the stop motions are given credit for improving efficiency to the point where the revised assignments were practical.

The roving-frame tender now cleans

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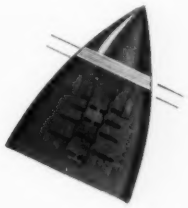

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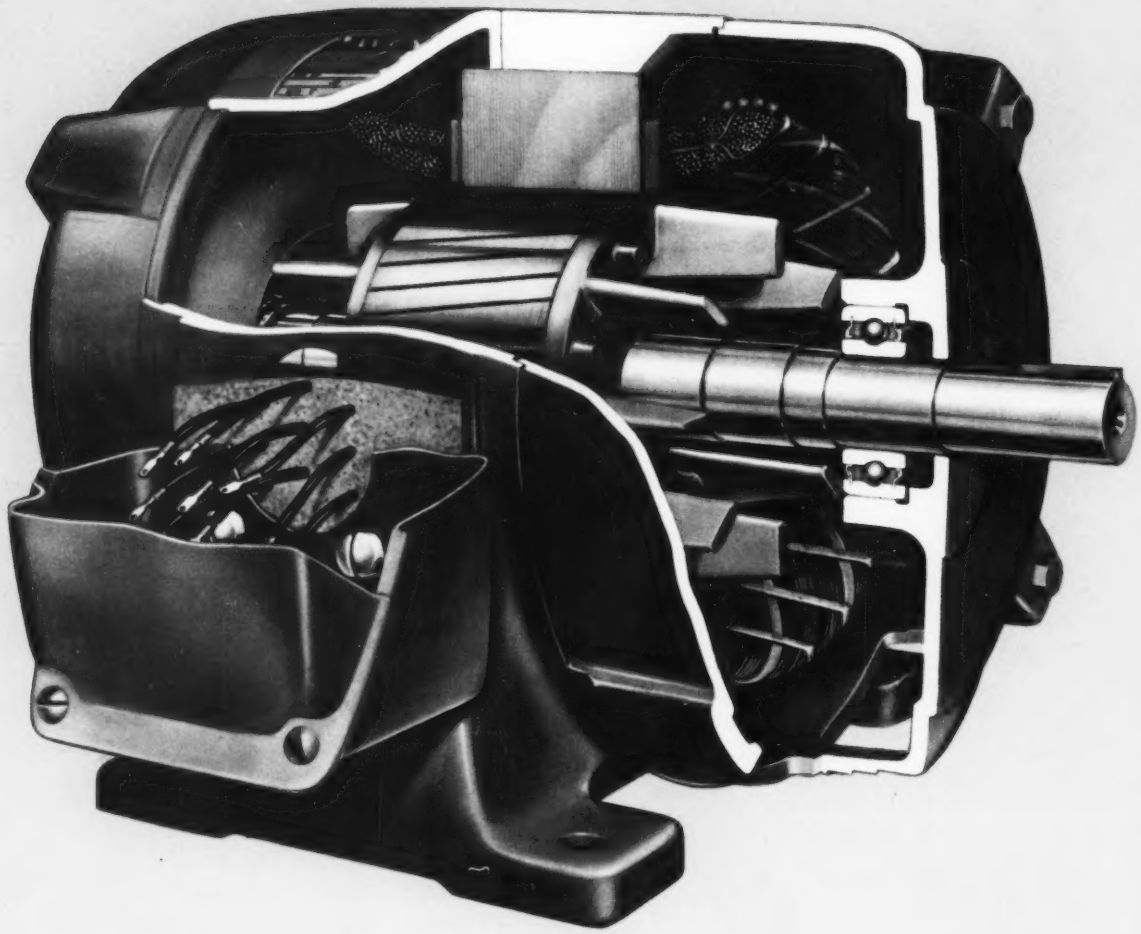

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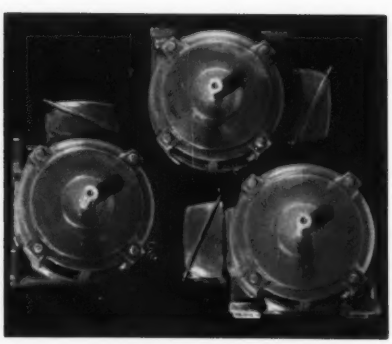
*Trademark for DuPont polyester film



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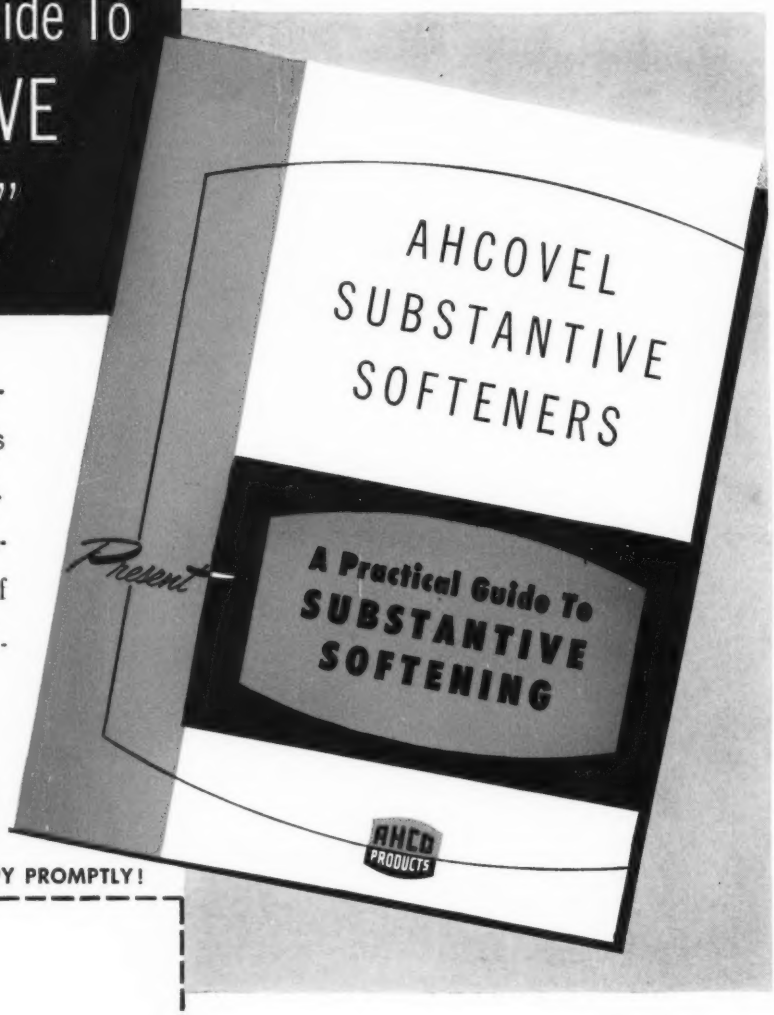

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the top and bottom clearers, carriage, and spindle tips. Fly from between the stop-motion wires and the breast-beam is also cleaned out once a day by roving tenders.

A card-room cleaner takes care of the backs, rolls, and back guides on the roving frames in addition to his other duties.

The stop motions have been in operation at Woodside for a year, and no maintenance has been required.

Management likes the stop motions because yarn quality and production are better, and frame tenders like them because the work is easier and earnings are higher.

Knitwear Inspection

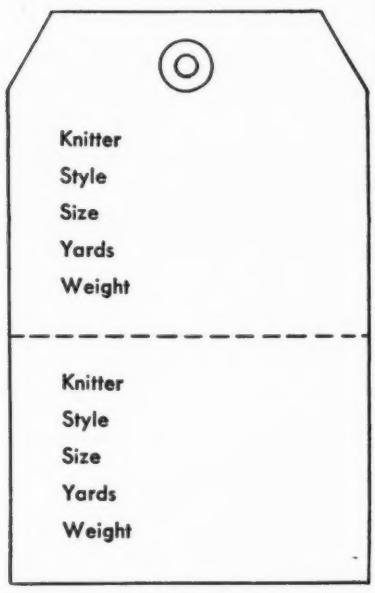
CONTINUED FROM PAGE 105

and the whole batch is knitted before a new shipment is opened.

A yarn check is made as a new yarn batch is delivered to the knitting room. The knitting-room foreman examines the yarn for evenness, strength, and twist. Knitters are instructed to make a report if excessive yarn breakage occurs on the knitting machine.

Knitter Operates 170 Feeds

The knitting room is laid out to allow, as nearly as possible, each line of machines to knit the same yarn. One girl looks after one multiple-feed



KNITTER'S TICKET is perforated in the center. The knitter on one shift enters the yardage figures from the counter. The next knitter doffs the roll.

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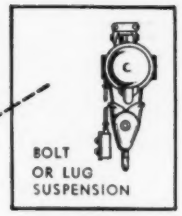
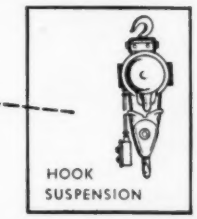
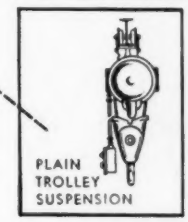
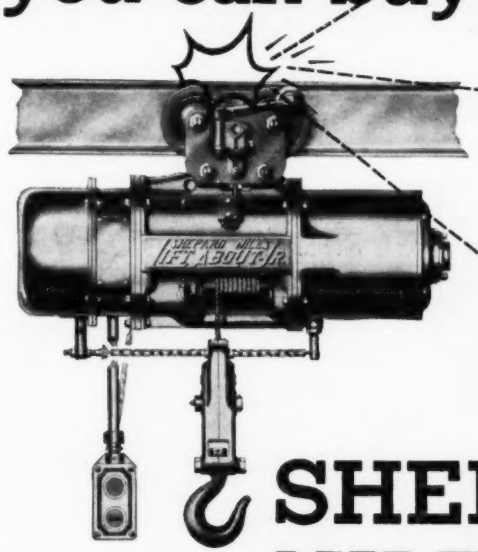


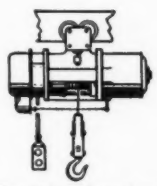




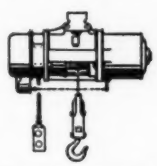


SHEPARD NILES

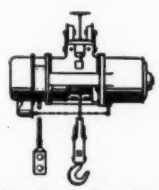
LIFT ABOUT-JR.



500 T Parallel or Cross Mounted.



1000 J Parallel or Cross Mounted.



2000 M Parallel or Cross Mounted.

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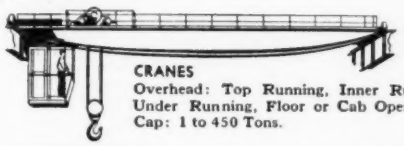
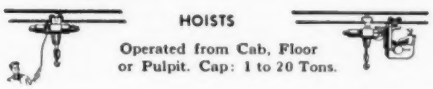
Hook your load to a Lift About-Jr.—it's the toughest light-service hoist you can buy. This rugged Shepard Niles Hoist is ideal for a hundred-and-one lifting jobs, guarantees you years of dependable service. It offers trouble-free wire rope hoisting, either rope or push-button operation.

Let a Shepard Niles representative tell you about the complete Lift About-Jr. line. He'll help you select the hoist with the right capacity and controls for your job.



CRANES
Overhead: Top Running, Inner Running, Under Running, Floor or Cab Operated. Cap: 1 to 450 Tons.



HOISTS
Operated from Cab, Floor or Pulpit. Cap: 1 to 20 Tons.

SHEPARD NILES Crane and Hoist Corporation
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( ) *Please have a representative call.*

NAME _____ TITLE _____
COMPANY _____
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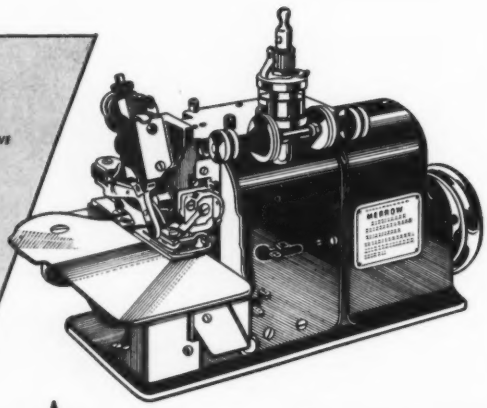
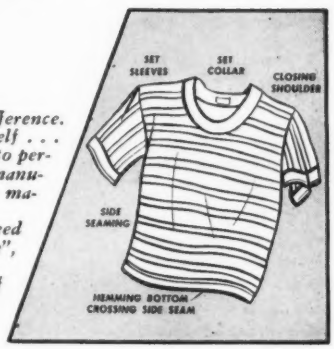
Mr. Outerwear Manufacturer:
MERROW CLASS A MACHINES
Can Boost Your Production



It's their versatility that makes the difference. "Merrows" don't collect dust on the shelf . . . their flexibility enables the same machine to perform a variety of operations. To you as a manufacturer this means higher production per machinery dollar invested.
Simplicity and rugged design of high speed Merrow Machines mean minimum "down time", provide you with a bonus in production.
We will be glad to demonstrate the work of these machines on your own garments.



In outerwear manufacturing, Merrow Class A Machines are extensively used on: polo shirts, sportswear, children's and infants' wear, bathing suits, sweaters, trousers and knit dresses. They are used on a wide variety of materials, including woven fabrics, knit fabrics of various construction, cotton, wool, rayon, nylon and other synthetics.
Applications of Merrow Machines include overseaming, hemming, overedging, serging, crochet and shell stitch edge finishing and shirring. Guides are available for attaching tape, cord, elastic, lace, borders, collarettes or rib material.

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TRADE MARK REG
The MERROW MACHINE COMPANY
ESTABLISHED 1838 INCORPORATED 1894
2803 LAUREL STREET • HARTFORD • CONN.

jersey machine and several ribbers for a total of 170 feeds.

In addition to creeling yarn and doffing fabric, the knitter inspects the fabric for holes, tuck stitches, and other imperfections. A 2-yd. length of fabric is pulled from the roll every 40 mins. and thoroughly inspected on both sides.

Two men are employed on each shift to blow off lint, oil the machines, and fix press-offs. Relieving the knitter of these duties enables her to concentrate on producing good fabric. The men, working as a team, get around to each machine about every 2 hrs. Each machine is stopped and blown down from top to bottom with an 80-lb. air-pressure hose for about 2 mins.

Needles are oiled every 8 hrs. by filling the oil cup at the start of the shift and letting the machine run with the valve open. A few spots of oil are fed to the head-ring gear each shift. The dial spindle, fabric take-up, and drive gears are oiled twice weekly.

A spot inspector on each shift examines about 12 yds. of cloth from each machine four times each shift. The inspector carries a form for each knitter. All faults found are recorded on the form.

Inspectors' Chart Soon Shows Faulty Machines

Since the faults are also recorded on the chart under the machine numbers, the knitting-room foreman can see at a glance the machines that are producing faulty fabric. A glance at the fault column will often tell the nature of the trouble.

The forms are checked by the foreman at the end of each shift. A machine producing consistent faults is turned over to a mechanic to fix or overhaul. If the inspector spots a serious repetition of faults, she reports the faulty machine to the fixer.

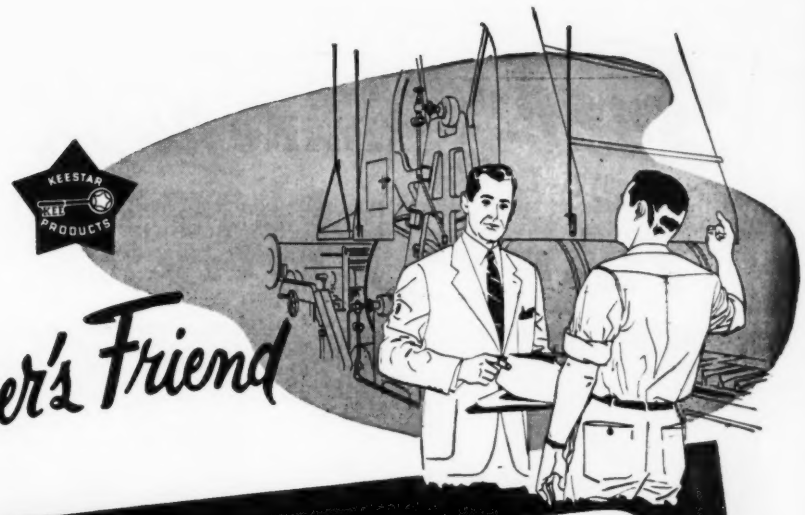
Each machine produces about one roll per shift, and one roll from each machine is checked over a lighted frame daily. Adjustment changes in quality also signal the need for an inspection over the frame.

The inspecting frame consists of a laying-up table and an inspection-light frame fixed to the frame of an old turning machine. The light frame, a front roller running on ball bearings, and the fabric roll to be inspected are supported on steel brackets.

The light frame accommodates up to six fluorescent tubes, according to the width of the fabric to be inspected. Outside tubes are removed on narrow-width fabrics to relieve the glare. A rod is pushed through the center of a fabric roll and rested in a slot on the lower bracket.

The fabric is run over the front

For more information, write direct or use Reader Service post card.



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3-2

*Snap-on VACUUM GRIP PLIERS ...the *right* pliers for every job!

● Choose from more than 30 Snap-on types and sizes. Each is built to perform its specific gripping, cutting or twisting function *faster, easier, more safely* than any other pliers. Snap-ons are heat-treated from surface to core and the jaws, cutting edges and joints are locally tempered to exact degree of hardness and toughness for greatest durability. Write for catalogs described above. Snap-on branch warehouses in principal industrial centers offer direct service to industry everywhere.

SNAP-ON TOOLS CORPORATION
8100-C 28th Avenue, Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation

roller, over the lights, and through the back rolls and is then wound up into a roll for weighing and dyeing. A handle is fixed to the right side of the machine for operating the clutch.

The operator checks the fabric for holes, drop stitches, and uneven yarns. If excessive holes appear over the fabric, the operator reports the faulty piece to the head fixer. If lines are caused by a faulty needle, the knitter is informed.

Keeping Roll Sizes to 100 Yds. Has Advantages

A yardage counter fitted to all machines keeps each roll 100 yds. long for easy handling in the dyehouse. Equal-size rolls also reduce waste in the cutting room.

Cutting rolls in 100-yd. lengths has a further advantage. When rolls were cut off at the end of the shift, regardless of the size, 20 mins. were wasted. If machines were kept running, the knitter's attention was distracted from her inspection duties.

Since the yardage counters have been put on, the knitter checks the yardage 3 mins. before shift-changing time and enters the yardage on a ticket.

The ticket is perforated; and both sections list the machine number, knitter, fabric style, yardage, and weight. The style and machine numbers are filled in by the order clerk, and the knitter on the first shift enters the yardage shown on the counter at the end of the shift.

The yardage counter automatically stops the machine when 100 yds. of fabric has been knitted. The knitter removes the roll and turns the counter back to zero. The difference between the previous yardage and 100 is entered on the second portion of the ticket.

The ticket goes to the fabric room with the fabric roll, and the weight of the roll is marked on the ticket. The tickets are collected at this point and sent to the payroll office, where the yardage is converted into weight. The ticket is torn in half and allotted to the individual knitter's paysheet.

New-Type Motors

(CONTINUED FROM PAGE 103)

power-type motor, a new diameter (180) smaller than the present 200 dia. had to be made.

In frames of 180 dia. and larger, motor manufacturers have learned over the years that a smaller number

News about

B. F. Goodrich Chemical *raw materials*

SEE WHAT GEON LATEX CAN DO

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GEON Polyvinyl latex is used successfully to improve or develop more saleable cotton and rayon products. The list shown here suggests some of the applications for this versatile material.

We'll gladly send you a new booklet which gives more details. And, we'll help you with technical information, and the selection of the Geon latex best suited to your requirements. For the new booklet, or information, please write Dept. GU-2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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cotton	*filler to provide stiffness.*
cotton • rayon	*binder for pigment coloring and printing.*
cotton	*carrier for specialty active agents such as fungicides and flame proofing chemicals.*
cotton • rayon	*binder for non-woven fabrics.*

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...but TENNANT
DRY-CLEANING
makes the difference!

What a contrast! An old, oil-soaked floor made 533% brighter . . . safer than before . . . and given a smooth, hard surface that resists dirt penetration —*all because it's dry-cleaned the* TENNANT *way.*

Gives you BRIGHTER, SAFER FLOORS . . . AT LESS COST

Are there dark, slippery floors in your mill due to prolonged wet-scrubbing? Then check these advantages of the TENNANT System:

RECONDITIONS your floors. Fast, easy-to-use Tennant machine brings your floors to life again! Gets rid of dark, rough, oil-soaked fibers . . . leaves floor bright.

HARDENS surface to resist wear. Special sealing process fills, binds and hardens wood fibers. Makes your floor resist dirt penetration . . . prolongs floor life.

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Tennant Floor Machines have 12" or 16" revolving steel wool roll (or other accessory) that smoothly removes dirt and traffic stains. Very speedy and easy to use. Provides a smooth, dry, hard surface . . . saves man-hours.

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TENNANT
Floor Maintenance System
ESTABLISHED 1870

The Tennant System
ENDS SCRUBBING

Floors, like roads, are safer when DRY!

of frame diameters and at least two lengths of frames per diameter provide the best utilization of material and the minimum number of parts for servicing the customers' needs.

The new program has been laid out so that only five frame diameters in the range of 1 to 30 hp. in open motors and 1 to 25 hp. in the enclosed ratings will be used, compared to six diameters formerly used.

Another new diameter (210) was put in the series to replace the 200 and 220 dias. Both the 3- and 5-hp. ratings fit easily into the two lengths of frame assigned to this diameter. Larger shaft diameters are used to take care of the increased horsepower.

New Motors Will Be More Reliable in Operation

To insure maximum interchangeability, the totally enclosed fan-cooled ratings have been laid out to use the same horsepower-frame relationship as the open ratings up through the 20-hp. rating.

To obtain the same standards of temperature rise, torques, etc. for the enclosed motors above that rating, larger frames are used.

For these reasons, the 25-hp. enclosed motor, rather than the 30-hp. enclosed motor, will be built on the 326 frame. This construction still gives the advantage of more horsepower per frame size but not to the extent possible in the smaller ratings.

All the new motors are not available yet because the motor manufacturers have had a big job of engineering and manufacturing development to do. The smallest diameter (182 and 184) became generally available about Jan. 1, 1954. Larger frames will be available at about five-month intervals. The largest frames (224 and 226) will be available by Sept. 1, 1955.

When New Motors Will Be Available

Frame Numbers	Date
182 and 184	Jan. 1, 1954
213 and 215	June 1, 1954
254U and 256U	Nov. 1, 1954
284U and 286U	April 1, 1955
324U and 326U	Sept. 1, 1955

OPEN-TYPE RERATED MOTORS for high-production purposes became available in 182- and 184-frame sizes the first of 1954 and will be followed with larger frames at about five-month intervals. Each motor manufacturer will announce his own delivery dates.

Steam and Heat Storage

How Servel Water Chillers

Solve your Cooling Problem

1

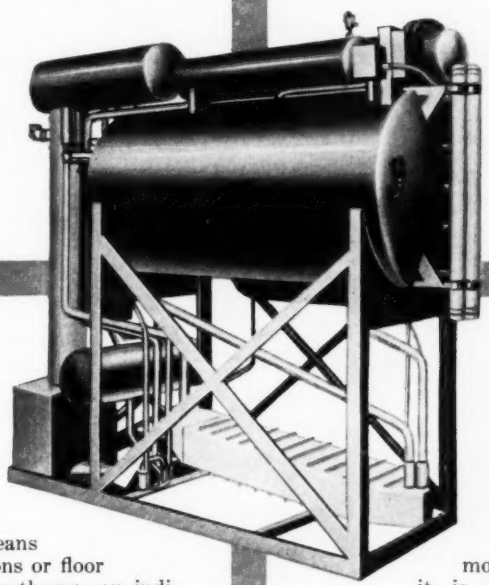
Regardless of cooling needs

The adaptable Servel 25-ton Water Chiller uses water as the refrigerant—provides economical cooling for *air conditioning, process cooling,* or *industrial pre-cooling.* Your Servel dealer can show you performance figures on applications most similar to your needs, in any of the three fields.

2

With the most economical fuel

Steam from the most economical source—gas, oil, LP gas, even *waste* heat—operates the unit, by Servel's exclusive, no-moving-parts *absorption* principle of refrigeration. This wide choice assures you of low operating costs . . . as does Servel's high operating efficiency.



3

Under every installation situation

Light floor loading and vibrationless operation means that no special foundations or floor braces are needed—in penthouse, on individual floors, or in basement. Simple piping, instead of expensive duct work, cuts installation time and costs. Zone control is unusually easy.

4

With exclusive assurance of satisfaction

The Servel Water Chiller cooling system has no moving parts to wear, thus it is quiet and vibration-free. Every Servel Water Chiller is backed by a 5-year warranty. See your Servel dealer or mail coupon for information and engineering co-operation.

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Please send me complete information on Servel equipment for ☐ Air Conditioning, ☐ Process Cooling, ☐ Industrial Precooling.

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Quality that saves you money
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Always SWIVEL and ROLL
Darnell Casters and Wheels start cutting costs from the very first day of installation. Easy rolling and swivelling increase employee efficiency, save floors and help add to production.
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Steam and Heat Storage

CONTINUED FROM PAGE 121

mostatic blenders in the plant reduce the temperature as required. The hot water enters the accumulator on top and, during periods of no draw-off, gradually replaces the cold water at the bottom.

For heat economy, it is often advisable to keep water near the boiling point in a single centrally located hot-water storage calorifier. Thermostatic blenders can operate through three or more draw-off points for central distribution of tepid, warm, and very hot water. The Sarco method uses simple self-actuated hot- and cold-water blenders.

How One Arrangement Works

Fig. 3 is a typical arrangement for the storage of hot process water at atmospheric pressure. The installation incorporates back-pressure power-generating equipment and two surface heaters in series. One of the surface heaters is supplied with exhaust steam from the power-generating plant and the other with surplus live steam from the boiler main. Cold water enters the system through the circulating pump, and the rate of discharge is controlled by the thermostatic regulator.

The regulator maintains a constant outlet temperature by varying the rate of water circulation through the heaters, and this rate is dependent on the amount of exhaust and surplus live steam available. Through the overflow valve, live steam enters the second heater, and the valve is operated by a pressure impulse from the boiler main.

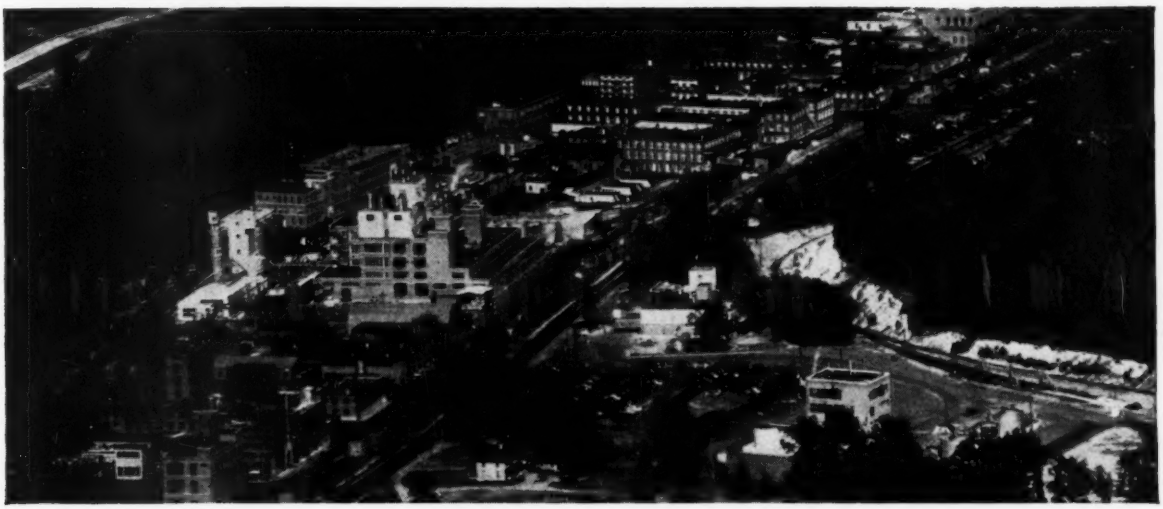
When the total steam demand is equal to the total amount of steam being generated, the valve *D* remains closed, and only enough water is circulated through the heaters to condense the exhaust steam from the back-pressure power-generating plant. If the general demand for steam decreases, the boiler pressure tends to rise, and this rise causes the valve *D* to open. By temperature impulse, a corresponding opening of the valve *E* admits sufficient cooling water to the heat-exchange system to condense all the available live steam.

All the steam used for power production and process-water heating is condensed in the surface heaters, and the condensate is returned through steam traps to the boiler feed tank. This system conserves heat and preserves good boiler feed water that would otherwise be discharged with the process water.

An elevated hot-water storage tank

LOW COST
is an essential part of the plant. The

Now headquarters for textile resins



Giant research and production facilities of Monsanto Plastics Division make possible unequalled service to textile finishers

Now allied with the company's Plastics Division, Monsanto's Textile Chemicals Department has greatly strengthened its position in the field of resin technology. Here, at Springfield, Mass., are research, development and production facilities unsurpassed in the industry. *Only* Monsanto's Plastics Division is a basic producer of *all six* major types of plastics.

This new alignment will mean better service, finer products for textile finishers. To take full advantage of the latest advances in resin technology, get in touch with MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Springfield 2, Mass., or with District Sales Offices in New York, Boston, Charlotte, Chicago, St. Louis, Detroit, Los Angeles.

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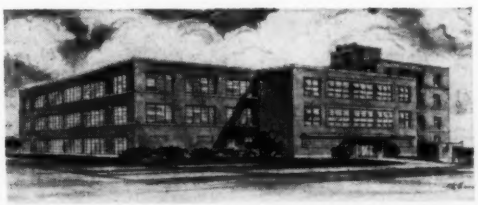
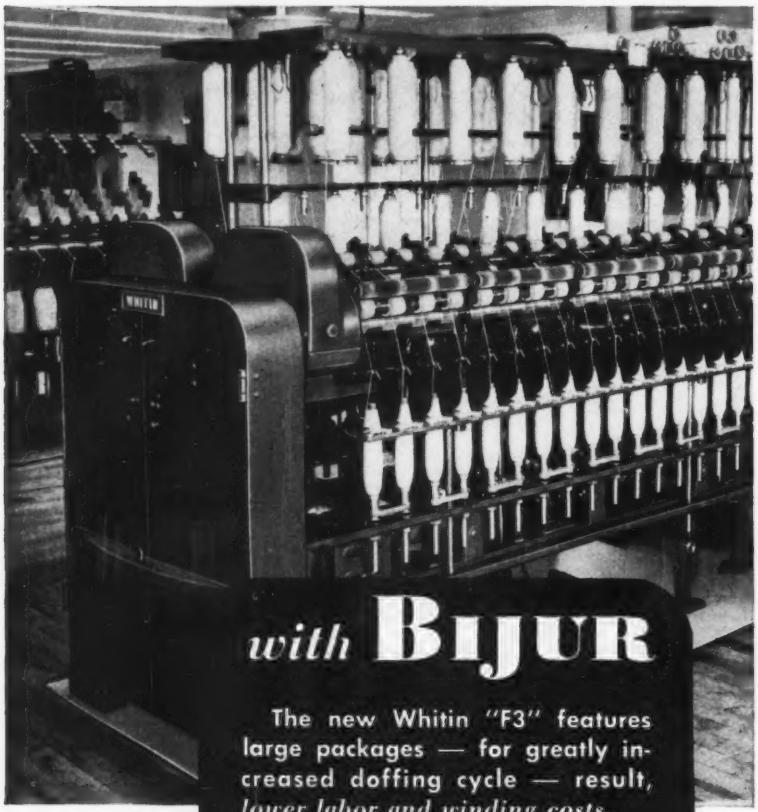


New Application Research Center, to cost $1¼ million, will provide the finest modern facilities for Monsanto technicians. Here they will work closely with customers on applications and products for tomorrow's markets.

LOW COST MAINTENANCE



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The new Whitin "F3" features large packages — for greatly increased doffing cycle — result, *lower labor and winding costs.*

Bijur automatic lubrication on the Whitin Spinning Frame meters just the right amount of oil at the right time to all head end bearings while the frame is running — result, *lower operating and maintenance costs.*

Specify Bijur lubrication on all new mill equipment you buy — result, *longer machine life, low maintenance, increased production.*

A Bijur engineer can solve your lubricating problems on all textile machinery.

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BIJUR

LUBRICATING CORPORATION

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Pioneers in Automatic Lubrication

200

is an essential part of the plant. The capacity of this tank must be sufficient to cover all variations in the rate of demand for hot water and the rate at which it is generated.

In dyeing plants, bleaching plants, and finishing departments in general, staggering steam-consuming operations to balance the steam load should be considered.

Accumulator Can Save Steam

An accumulator can save steam if the power load is shut off for short periods, a condition that causes a sudden drop in the demand for power steam. At such times, the accumulator can be brought into play with a bypass from the power-steam boiler. The pressure can be reduced, and the furnace can be cleaned without a sacrifice of the steam that would otherwise be blown into the atmosphere.

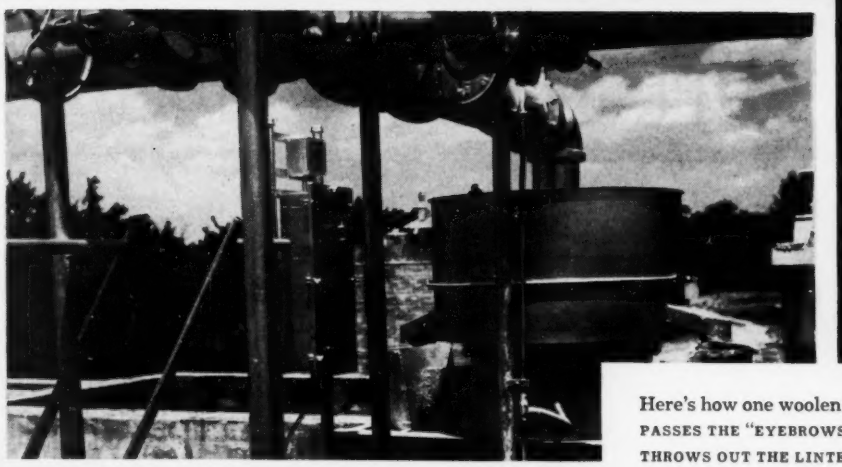
Special circulators that circulate the hot water in accumulators during charging save heat. This system provides a higher water temperature in a shorter time.

Two Types of Accumulators

There are two types of accumulators available. The Rateau accumulator is the simplest type, but it is considered unsuitable for long-term steam demands as opposed to short bursts of steam supply. The Ruth type of accumulator has been used with considerable success, and in many cases old boilers have been converted to accumulators. If stabilization of the steam load is brought about by such means, an average of 10% in fuel costs may be saved. If the main principles of the systems are understood, alterations in working details usually suggest themselves as conditions vary.

In most systems of the Ruth type, the steam draw-off is thermostatically controlled by pressure and temperature in the low-temperature mains that supply the process units If pressure fails in the low-pressure mains, the valve operates to reduce the pressure in the accumulator; and steam is drawn into the process mains to keep the supply at a constant pressure. The accumulator is, of course, linked with the high pressure and power main and is charged by the excess of steam that is not required for power production.

Steam-load variation can in this way be balanced so that peak loads in processing, kier boiling, scouring, dyeing, print-cloth washing, etc., can be met by drawing off the required balance of steam from the accumulator. This steam makes good the deficiency in the ordinary low-pres-



Here's how one woolen mill
PASSES THE "EYEBROWS"...
THROWS OUT THE LINTERS

Lebanon woolen mill solves tough waste problem with Sweco "3-D" Separators

City officials of Lebanon, Tenn., laid down rigid requirements for screening waste water from Lebanon Woolen Mills to be processed in a new sewage system:

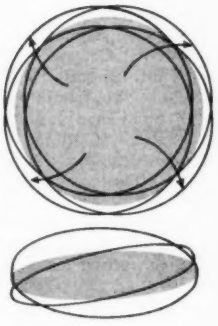
1. "Eyebrows," the short hairs from legs and shanks of sheep, could be passed into the sewer.
2. Lint and other solids must be removed.

On conventional screening equipment, using mesh small enough to remove lint, the "eyebrows," being tapered in shape, would wedge in the wire openings and cause blinding. Mesh large enough to pass the "eyebrows" would also pass lint and other prohibited solids. On-the-spot testing by SWECO District Engineers solved the problem. A SWECO Separator using 80-mesh screen passes the "eyebrows," while the exclusive circular gyratory motion of the SWECO balls up the lint and rolls it out the discharge spout.

The mill is now meeting all city waste disposal requirements with two 48-inch SWECO Separators... which remove 5% solids at a continuous 24-hour flow rate of 800 gpm.

New "3-D" screening action

The unique "spiral-gyratory" action of the SWECO floating-screen Separator tumbles the material in all three directions at once . . . results in faster, more efficient separation . . . reduces blinding and clogging.



Free analysis of your screening problem

If you have a problem of removing solids from waste water, SWECO will gladly make a detailed study and recommendation without cost to you.

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4. **LARGER SECONDARY RACEWAY AND BALLS** provide tremendously increased swiveling efficiency and greater shock absorption of overloads. Easier working!
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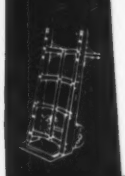
*PATENTED

Rigid Casters, Series "33" in matching heights



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sure supply line from the power-unit exhaust.

As a guide to required capacity, a vessel with a maximum storage pressure of 100 psi. that supplies steam to a 10-psi. steam range will store approximately 1 lb. of steam at that pressure. When connected to a 40-psi. range, the storage is 1 lb. of steam per gallon of water in the accumulator.

Books of Interest

Looking for Anybody In New Jersey

1954-55 NEW JERSEY INDUSTRIAL DIRECTORY; Hudson Dispatch Bldg., Union City, N. J.; 1,100 pages, $25.

Over 15,000 firms are listed in this directory. Firms are listed alphabetically, geographically, and by product. Information on counties, towns, tax rates, and insurance rates is included. Since the last edition two years ago, over 2,000 new industrial companies have been started and about 1,700 have gone out of business.

Safety Council Aids

SHOWMANSHIP IN SAFETY; The National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.; heavy paper, $1.25 to members, $2.50 to nonmembers.

"Showmanship in Safety" contains more than 150 ideas for displays, demonstrations, stunts, awards, and other interest-arousing devices.

The book tells how to add sparkle to safety meetings and how to sell employees on wearing protective equipment, and it gives many other assists to the safety man in putting across his program.

Shrink-Resistant Data Reported on Wool Shirting

AN EDUCATIONAL ORDER TRIAL ON 10.5-OZ. SHRINK-RESISTANT WOOL FLANNEL SHIRTING, Textile Series Report No. 76; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 26 pages, 75¢.

This booklet reports an interesting approach to the problems of shrink-resistant wool processing. The report summarizes the experience of a large number of Army contractors who tested, by various shrink-resistant processing techniques, a considerable quantity of 10.5-oz. all-wool flannel shirting. This "educational order" gave an opportunity to textile finishers

New Dispersant NI-W offers you many benefits in wet processing

ORONITE'S new Dispersant NI-W is a clear, light amber colored nonionic surface active agent readily adaptable to numerous textile operations—as a detergent in wool scouring bath (low adsorption rate), for quick penetration and thorough wetting in dyeing, leveling, fixing and stripping.

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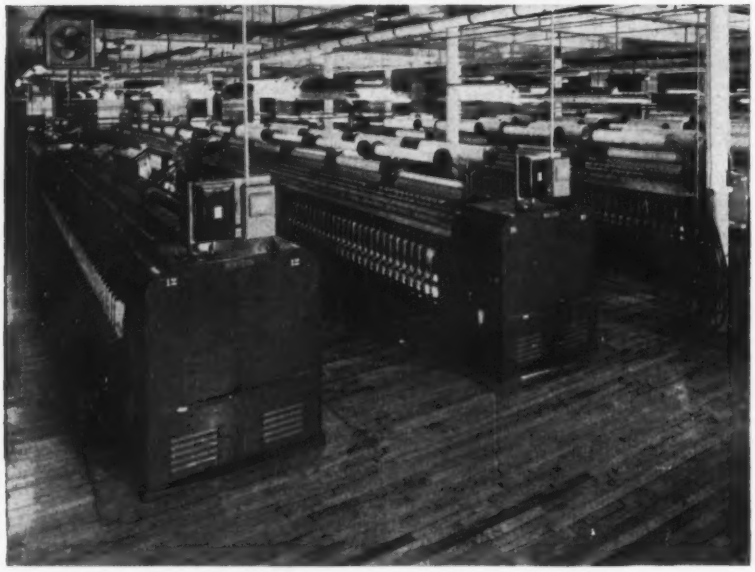
Modern spinning room of S. Stroock & Co., Inc., Newburgh, N.Y., with 40-year-old floor of Northern Hard Maple.



a thoroughly excellent floor–
40 years ago, *and* today!

It's foot-friendly! NORTHERN HARD MAPLE

The splendid, ultra-modern spinning frames and equipment in the sparkling-clean Stroock Mill, where some of the world's finest woolens are produced, are quite "at home" on the fine, old floor of Northern Hard Maple. For there's nothing more modern than maple—*or more thoroughly time-proved.* Generations of textile folk know the genial, warm comfort of *resilient* maple floors—their ease of cleaning—their smoothness and freedom from slivers—their easy refinishing ("always a new floor underneath," you know). When remodeling, repairing, modernizing your mills—and these are "modernizing days" — trust **MFMA**-marked Northern Hard Maple to maintain the quality that has served you so long and faithfully. In block, strip and pattern designs. See Sweet's (Arch. 12k-MA) or write for data, Finish Folder and NEW Approved List of finishing products.

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and producers of shrink-resistant compounds to learn by experience the production problems involved, and it demonstrated the practicality of shrink-resistant processing for this popular fabric.

Tests Show Wool Has Outstanding Recovery

THE TENSILE BEHAVIOR OF SOME PROTEIN FIBERS, Textile Series Report No. 80; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 45 pages, $1.25.

To determine the extent to which wool-like tensile properties are present in the other protein fibers (mohair, silk, human hair, and the regenerated fibers casein and Vicara), laboratory tests were made of their tenacity, extensibility, and elastic recovery. Graphs show the behavior of each fiber or yarn when knotted, when wet, when processed under varying temperatures and humidities, and when subjected artificially to the stresses encountered in practical use.

Results indicated that the recovery of wool in its original state is outstanding and that its elastic recovery is actually improved after mechanical conditioning and when wet. These desirable qualities are present to a lesser degree in mohair and human hair, and to some extent in the regenerated fibers casein and Vicara. Silk has considerable permanent "set" when dry or wet, and almost complete elastic recovery immediately after mechanical conditioning.

English Book Explains Primary Loom Motions

PRIMARY ASPECTS OF THE POWER LOOM, by W. Middlebrook; Emmott & Co. Ltd., 31 King Street West, London; paper, 48 pages, 5 shillings (71 c.).

Information and pictures of the different types of five principal loom motions (in most cases, English looms) are given. The motions discussed in detail are: let-off, shedding, picking, beat-up, and take-up.

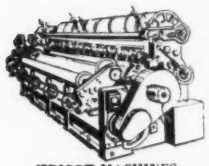
The purposes of each motion is discussed, and the book should be of value to men interested in the theory of weaving. English weavers can gain much practical knowledge of looms since, primarily, their looms are discussed. Weavers using American machinery will gain little practical information.

Six Reports Available From Government Agency

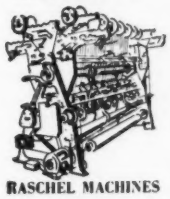
END-USE REQUIREMENTS VS. MATERIAL PROPERTIES OF TEXTILES, QMC Textile Series Report No. 83; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 33 pages, $1.

This study should be of value to those who want to translate the properties of fibers and yarns into end products with better performance. It examines spinnability, weaveability, knitting quality, dyeing characteristics, and adaptability to finishing treatments. Functional charac-

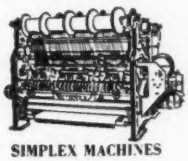
The Reiner Line:



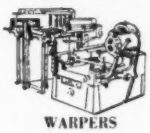
TRICOT MACHINES



RASCHEL MACHINES

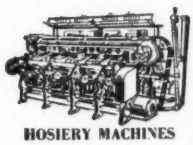


SIMPLEX MACHINES



WARPERS

CREELS



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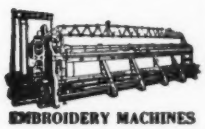

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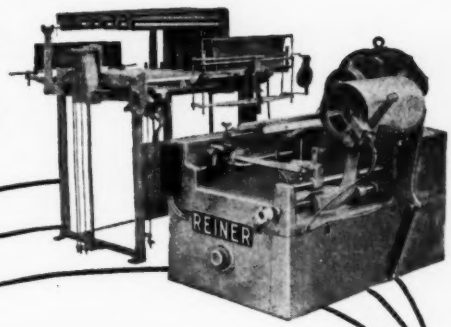

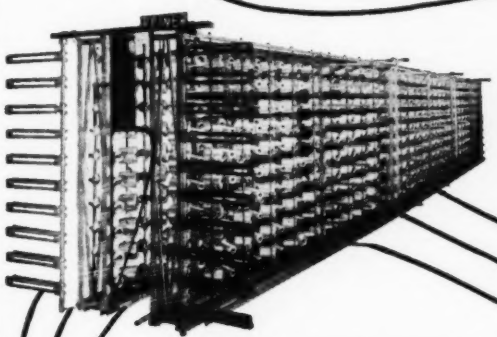

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Spools up to 24" in length. Flange diameter up to 21". Adaptable to multiple spools for narrow fabrics. Other models up to 84" in length.

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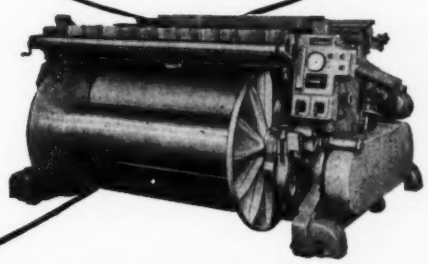
feature various stop motions, tension devices, balloon control. Suitable for all types of yarns and packages, including nylon pirns. Other Reiner Creels are Truck, Single Type, Heavy Duty, or to your specifications.

Ready spare part service available for all Reiner equipment.



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Flange diameters 26" to 36"—Length of beam to customers' specifications—Suitable for dye beams — Spindle drive — Rheostat controlled speed from 100 to 750 yards per minute—many other features.

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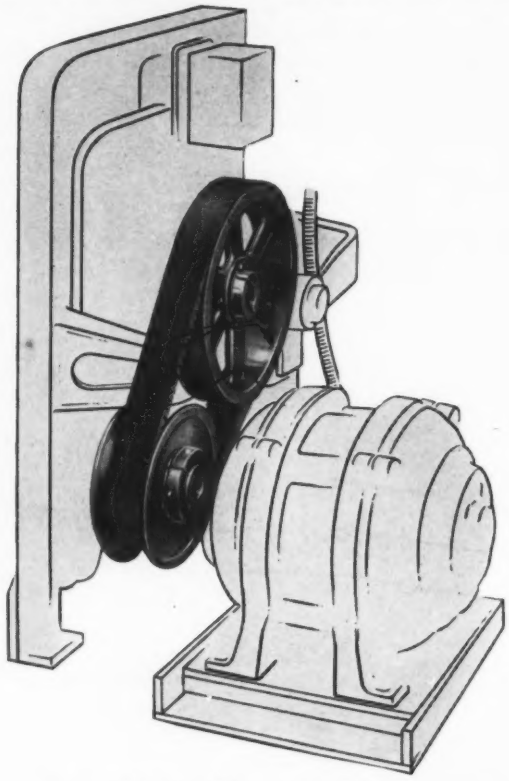

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Yes, here's a variable speed drive that will give years of trouble-free operation. Just look at these exclusive features:

WIDE SPEED RANGE — Up to 3 to 1 speed range ratio.

HORSEPOWER RANGE — Radically new notched belt construction gives higher horsepower capacity for single belt drive — 5 to 20 horsepower motors.

NEW CONSTRUCTION — The first wide range single groove stationary control variable pitch sheave with both flanges moving simultaneously.

POSITIVE LOCKING — Simplified design provides positive clamping of the two adjustable flanges eliminating fretting corrosion. Flanges are quickly and easily released for making speed changes.

HIGHER EFFICIENCY — Single wide belt gives maximum HP efficiency. Eliminates problem of maintaining matched belts and matched grooves for equal power distribution.

LESS SHAFT OVERHANG

ADJUSTABLE AT EITHER END — Single adjusting screw easily accessible at either end of the sheave.

NO LUBRICATION — No grease fittings or oil cups, therefore, no preventive maintenance needed.

MORE ECONOMICAL — This unit will give a variety of speed changes best suited for your product or operation . . . sensibly priced too.

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teristics that determine such qualities as appeal, wear resistance, and resistance to shrinkage are summarized, and the factors that determine the mechanical behavior of yarns are charted. The research people conclude that individual-fiber geometry determines the capacity to meet end-use requirements as much as fabric geometry does.

THE INFLUENCE OF PREPARATION AND METHOD OF DYEING AND FINISHING ON THE COLOR AND COLORFASTNESS OF VAT-DYED COTTONS, QMC Textile Series Report No. 69; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 87 pages, $2.25.

Can a higher degree of colorfastness be achieved by better control of the dyeing process and, if so, what particular factors in the process influence increased colorfastness? These are questions answered by recent exposure tests conducted jointly by the Quartermaster Corps and the American Association of Textile Chemists and Colorists. Their report shows the effects of various dyeing and finishing techniques on the ultimate color and colorfastness properties of textiles.

Samples were prepared by different types of boil-off and dyed by several methods, in numerous combinations. They were then evaluated for fastness to mobile laundering and scrubbing, to light and outdoor exposure, and to other destructive agents such as weather, salt water, and perspiration. Conclusions emphasize the importance of proper distribution of the dye in relation to fiber surface energy, the relative value of methods of boil-off, and the effects of mercerization and water repellents in color-fastness.

THE BRITISH COTTON INDUSTRY, Anglo-American Council on Productivity; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 45 pages, 75¢.

Report of a U. S. productivity team, which visited Lancashire cotton mills and textile laboratories to study British industry conditions and offer on-the-spot suggestions. This report outlines briefly the growth and development of the cotton textile industry in England, reviews recommendations of a British team that visited U. S. mills, and describes the present structure of Lancashire mills: their methods and production standards, accounting methods, work flow, labor-management relationships, and improvements in technical equipment.

A STUDY OF SOME FACTORS AFFECTING THE TEAR AND WATER RESISTANCE OF LIGHTWEIGHT CLOTHING AND TENTAGE FABRICS, QMC Textile Series Report No. 81; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 24 pages, 75¢.

In the search for a new lightweight cotton fabric of high wind, water, and tear resistance, 16 sateen and water-resistant twill fabrics were tested for tear and water resistance, dynamic absorption, air permeability, and spray and drop penetration. The results indicate that 5.8-oz. high-sley, five-harness sateen fabrics, of combed,

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Fast Dyes For Resin-Finished Fabrics

The growing popularity of resin-finished viscose and cotton fabrics points up the importance of Calcodur* Resin Fast Dyes. American Cyanamid, a pioneer in the development of textile resins for crease and shrink resistance, produced this line to insure outstanding fastness to light and washing for these fabrics, after treatment with melamine and urea-formaldehyde type resin finishes.

Since most ordinary direct dyes undergo a shade change and a deterioration of light fastness upon resin treatment, it was extremely difficult for a dyer to maintain a shade match and satisfactory fastness after this treatment. Often the after-treatment caused such a radical change in shade and fastness that the fabric was rejected on the grounds of poor quality. The problem required as much guesswork as skill, but it has now been solved by the Calcodur Resin Fast Dyes.

Proved by many mill trials, these dyes have the light and wash fastness of the best dyes in the direct color class, they leave effect threads of acetate essentially white and – very important – they show a negligible shade change upon resin after-treatment. To date, the line consists of Calcodur Resin Fast Blue R, Blue 2R, Blue 2G, Blue 6G, Brown BR, Orange 5G, Red 6B, Yellow R, Gray 2G, Gray B – all suitable for resin treatment and capable of producing popular shades on viscose and cotton fabrics.

Scouting For a New, Fast Yellow?

Here it is, Calcosol* Fast Yellow GL Paste, a bright, greenish yellow with outstanding fastness to light, even in pale shades. This bright newcomer also offers extraordinary light fastness on cotton and viscose rayon, both as a self shade and when resin-treated.

Apply it by the usual dyeing methods – on package, skein, raw-stock, warp and piece goods. We recommend it especially for use on sheetings, shirtings, bedspreads, corduroys, draperies, towels, cotton flannel and many other cotton or viscose fabrics requiring superior vat color fastness in a bright yellow.

Temperature Affects Light Fastness

Recent tests sponsored by the AATCC have demonstrated the importance of temperature control in evaluating light fastness of dyes on synthetic fibers. If the temperature of the fabric in the Fadeometer falls below 165°F, as measured by a thermometer with a black bulb, the rate of fading is retarded so that an excessivley long time is required to carry out a test. On the other hand, if the temperature exceeds 165°F, the conditions deviate too much from sunlight exposure and very rapid fading will occur.

At Bound Brook we constantly observe all the latest known precautions so as to give the consumer as true a picture as possible of the merits of our dyes.

For the Textile Bookshelf

The Application of Dyes to Textile Fibers at High Temperatures (Calco Technical Bulletin No. 833). A review of basic studies of the dyeing of textile materials at elevated temperatures, begun in 1941 by Calco in cooperation with the Bachmann Uxbridge Worsted Corporation.

Effect of Resin Treatments on Viscose and Cotton Dyed With Selected Calcomine and Calcodur Resin Fast Dyes (Dyestuff Technical Bulletin No. 835). This bulletin describes the working properties and gives the detailed fastness properties of selected Calco® dyes which are particularly useful in fabrics that are to be after-treated with melamine-formaldehyde or the urea-formaldehyde resins.

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Ideal High Speed Ball Bearing Drawing Rolls*

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Drawing frames equipped with Ideal Rolls produce approximately 40% more sliver than is possible on any other frame.

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Ideal's construction practically eliminates bruising and shearing of stock. Permanent synchronization of the roll units prevents thick and thin places. Fluted rolls, higher speeds, and longer draft produce a deeper and more permanent crimp.

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We will be glad to prove these claims to you . . . on your stock in our pilot plant, or in your mill.

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Bessemer City, N. C.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

plied and mercerized yarns, have higher tear resistance than wind-resistant twill fabrics and can be satisfactorily used as replacements.

MECHANICAL PROPERTIES OF DECRYSTALIZED COTTON, QMC Textile Series Report No. 79; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 23 pages, 75¢.

This report describes a special amine treatment of cotton fibers that increases their extensibility without lowering their tenacity. This is accomplished by swelling cotton staple fibers and spun yarns in aliphatic amines, extracting the swelling agent, and then drying the fibers. While this process reduces the crystallinity of the fibers, it increases their extensibility and resistance to rupture and improves the wet recovery of native cotton. Although decrystallization heightens abrasion damage, it is believed that additional experimentation will produce variations in the final product that will considerably increase the range of suitable uses.

MECHANICAL CONDITIONING OF TEXTILE FIBERS, Textile Series Report No. 82; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 60 pages, $1.50.

An investigation of the mechanical properties of natural, man-made, and synthetic fibers and changes in their characteristics under service conditions. Sixteen samples, representing practically every type of fiber, were subjected to stretching procedures, and their elastic recovery and structural changes before and after deformation were recorded. Examined are such subjects as stress-strain relationship, mechanical conditioning of fibers, stress hardening and fatigue, "cold-drawing," cycling, and sustained extension. The information given is of especial value in processes where textiles are subjected to stress and strain.

How Much Testing?

CONTINUED FROM PAGE 110

$$V = \frac{S.D. \times 100}{\overline{X} \text{ (from Fig. 2)}}$$

$$V = \frac{.0225 \times 100}{1.597}$$

$V = 1.42$

$V^2 = 2.02$

(3) E = tolerance

This tolerance is the 3% used before.

So now we can find the number of observations that are necessary to meet our requirements.

$$N = \frac{t^2 \times V^2}{E^2}$$

$$N = \frac{3.84 \times 2.02}{9} = .862 \text{ or } 1$$

This means that we can test one bobbin from each frame and get the necessary control of the process. We had already discovered that a 6-yd.

CONTROL HUMIDITY, ROOM TEMPERATURES

at WAUMBEC MILLS, Manchester, N.H.

Executives of the Waumbec Mills, Inc., Manchester, N. H., find their Stanley Magic Door Controls pay for themselves in two important ways.

Stanley Magic Door Controls act to seal in humidified air, keep room temperatures at desired levels. Doors open on approach, stay open until passage is clear, then close automatically.

They increase operating efficiency, lower operating costs. Use these check-points to benefit from Waumbec Mills' experience:

- **Maintenance.** Don't "bang" doors open. It costs plenty in repair bills, high replacement costs.
- **Time and Effort.** It takes man-hours to pull and tug at heavy plant doors. Magic Door Controls move traffic without wasted motion.
- **Labor Relations.** Cement and improve good employee relations with Magic Door Controls. Magic Door users find they step-up production, cut absenteeism. Whether your present doors swing, fold or slide, Stanley Magic Door Controls will expedite work flow in your mill.

Regular Stanley Magic Door operator with pull cord control, handling two-way traffic through an "in" and "out" door, using existing air supply and existing door can be purchased for openings up to 60" and for openings up to 84". Send for full information today.

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☐ Call when in area.

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Now, there's over twice as much horsepower at "*the top of the South*" for the wheels of industry! VEPCO—serving most of Virginia and adjoining areas in North Carolina and West Virginia—has more than doubled its electric generating capacity within the last six years.

New industries, established industries wishing to expand, and those whose roots have been in the "*top of the South*"—have found that *here* Men, Materials and Markets team together for better production in a favorable climate, and where fine transportation provides ready access to the markets of the nation, and to those of the world through the unequalled ports of Hampton Roads.

Here, at the "*top of the South,*" the people are really friendly to new and expanded industry for, with traditions going back to Colonial days, they know that more invested capital means greater opportunities for workers who realize what free American enterprise can do.

Our Area Development Department can help *you* find the location you want for your industry. We have the information on sites, natural advantages and technical details.

A letter, postal card or telephone call will start this confidential service to you.

AREA DEVELOPMENT DEPARTMENT

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND 9, VIRGINIA

reeling was sensitive enough to show a significant change. So 6 yds. reeled from one bobbin gives an adequate test for each frame.

We will probably be testing each shift and at least each day; so any chance error will not make or break us. Perhaps the purist in statistics will argue that one specimen does not constitute a sample. If we should want to make a concession to these fellows for the sake of harmony, we could take two bobbins from each frame or reel two 6-yd. samples from the same bobbin.

Mill Maintenance

Controlling Fire Hazards Reduces Fires up to 50%

Fires occur more frequently in cotton mills than in other industrial plants because cotton fibers and lint are easily ignited and extremely combustible.

The primary cause of fires in cotton mills is failure of electrical equipment. Spark-producing foreign material in cotton stock is the second most frequent cause, and ignition by friction is the third.

Several things can be done in each case to reduce the number of fires.

Electrical Failures

Fires caused by electrical failures can be controlled by:

1. Using special textile motors on equipment
2. Replacing open controls with lint-tight enclosures
3. Substituting vapor-proof lamps for the old, unguarded incandescent bulbs
4. Safeguarding drop lights, extension lamps, and electric conveyor equipment to prevent heating of stray fibers or lint
5. Replacing flexible armored cable with multiconductor cord
6. Employing watertight connectors to controllers and switch boxes

Spark-Producing Material

Controlling the second major cause of fires, the spark-producing foreign material in cotton, is a simple case of adding effective magnetic separators to the opening equipment. One effective

Dependable Source for Chemical Raw Materials

Ralph Fieldsend, General Manager and Secretary of Hudson Worsted Company, Hudson, Mass., and Frank Ledger, Superintendent, inspect a batch of wool after scouring.

"We have been a Wyandotte Soda Ash user for over 40 years"

— Ralph Fieldsend, Hudson Worsted Company

"We have a very unusual company in these days of management turnover," says Ralph Fieldsend, General Manager and Secretary of Hudson Worsted Company, Hudson, Mass. "Our company has been under the guidance of one president for 58 years. A good supplier stays with us, too — for more than 40 years, we have been a constant user of Wyandotte Soda Ash in our wool scouring processes.

"We know that to have good sources of chemical raw materials is a 'must' in our business. We also appreciate that the chemical industry is a growth industry, and, as such, can play an important part in all industries, including our own.

"While processes haven't changed in years in commission wool combing, still the need for quality has never diminished. Consequently, we demand the highest quality materials from our suppliers."

Do you want a source of chemical raw materials that is a working partner in your progress? You'll find one in Wyandotte . . . a partner that believes in maintaining the highest quality in present products, and that is continually searching for new products to aid the industries it serves. May we serve you? *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte

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If you're interested in a new plant site — investigate Evansville's host of advantages. Join us in a half-hour film journey that covers every factor you might consider in choosing a new industrial location. Enjoy a "copter-eye" view of the community that lives up in every way to its surname, "Balance Point, U. S. A." . . . rich in natural and human resources . . . outstanding in competitive advantages by every standard. May we send you this brand-new motion picture for your private viewing? Or, if you prefer, we'll bring it to you for showing — whenever and wherever you say. Either way, please mark and mail the coupon today.

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arrangement of magnetic separators is to place them on opening lines at the end of the feed tables, where the cotton from the blending feeders enters the duct work to the openers. By removing tramp metal, the separators minimize the chances of fire in openers or pickers.

In addition to this proved method of fire control, these suggestions will also promote fire safety in the opening room:

1. Space pickers wide apart to form wide aisles between bales. This arrangement will reduce the chances of fires spreading.
2. Use good housekeeping methods.
3. Make floors watertight.
4. Mount fire extinguishers (the dry-chemical type) on roof-supporting columns.
5. Instead of using open feeders, use reserve sections on pickers to block fires coming from the openers.
6. Place clean-out openings in duct work.
7. Elevate motors.
8. Use rigid pendent lights.
9. Equip each feeder with sprinklers that have individual control valves.

Friction Fires

Friction fires, the third major cause of fire losses, result primarily from improper lubrication and faulty machine maintenance. The solution here is to make a lubrication survey and correct faulty lubrication practices. An outside engineer is often needed.

An example of proper lubricating methods for fly frames is the use of a metering oiler to deposit just the right amount of oil on the top rolls. This method eliminates excess oil, one of the major causes of frictional fires.

Five other factors that must be considered in reducing fire hazards are: (1) machinery characteristics, (2) safe operating speeds, (3) reasonable production loads, (4) preferable sequence of processes, and (5) proper cleaning schedules.

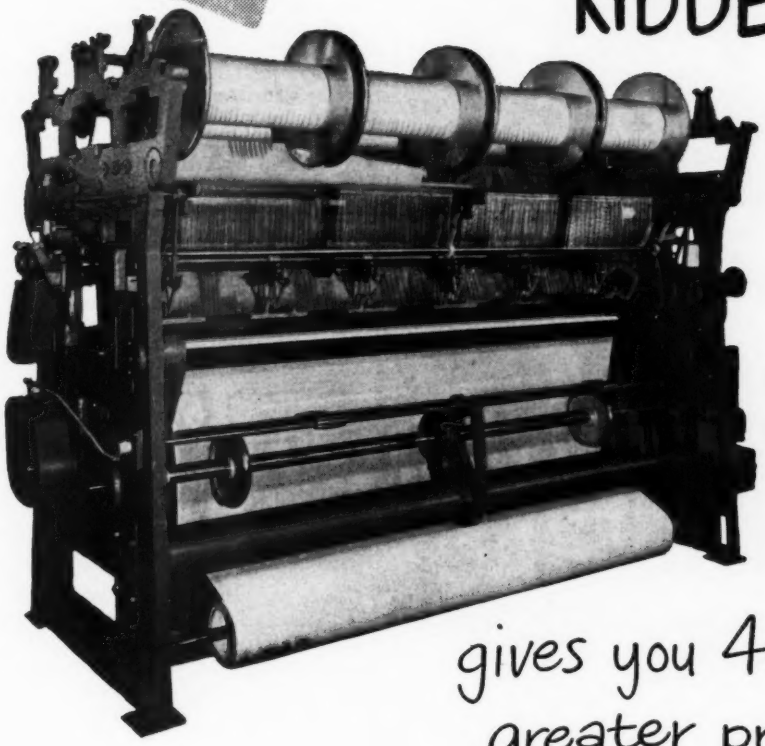
Where the methods outlined have been used in cotton mills, opener-picker fires have decreased 20%; and the annual jacquard-weaving fire loss has dropped by more than 50%. *Associated Factory Mutual Fire Insurance Companies*

Short Lengths of Flooring Reduce Mill-Building Costs

There is a definite opportunity to save money in flooring by using short lengths of hard-maple, beech, and birch flooring.

Floors made from short lengths provide the same strength, lasting quali-

here's the NEW Model "E" KIDDE KNITTER



gives you 40 to 50% greater production on tulle, shoe fabrics, elastic power net, etc.

Production speeds up to 500 courses with 2 guide bars . . . up to 400 courses with 4 guide bars can be maintained 24 hours a day with the new Model E Kidde Knitter. A completely new machine, the Model E is equipped with high speed cams, totally enclosed and running in oil . . . double the usual number of guide bar rocker cams . . . pattern wheels or chain drum . . . quick stop . . . and practically non-breakable needles—all features never found in a Raschel machine before. Investigate how this machine can slash your knitting costs! Write for full information.

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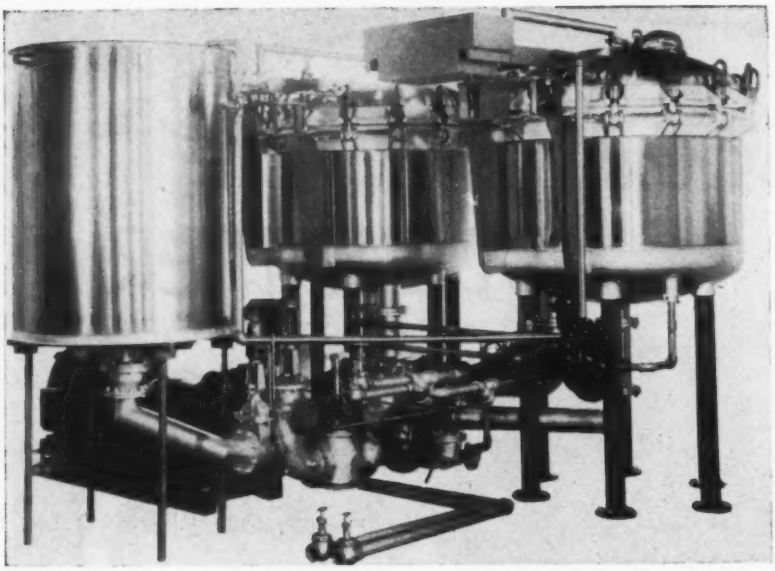
KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Kidde Knitter



GASTON COUNTY'S RUGGED CONSTRUCTION

ASSURES SAFE WORKING PRESSURE

Gaston County's rugged construction is of prime importance in the high-pressure, high-temperature dyeing of synthetic fibers.

Fully automatic controls assure *complete* accuracy, unaffected by outside interference.

Gaston County Dyeing Machines meet the full requirements of the ASME code.

GASTON COUNTY DYEING MACHINE CO.

Pioneers in Automatically Controlled Dyeing Machinery

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Gaston County Dyeing Machine Co.
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The Rudel Machinery Co., Ltd.
614 St. James St. W., Montreal
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ties, and smoothness as floors, laid with the standard lengths.

Short lengths are manufactured exactly the same as the standard lengths and are side-and-end matched. The short lengths come from cutting the standard lengths. They are sold as short lengths because they're less than the minimum standard length specified by the grade rules.

Tests to determine the cost of laying short lengths vs. standard lengths have not been conclusive. But head carpenters have pointed out in several of the tests that their men can carry along three or four courses of short lengths. Usually, the men are able to lay only one course of standard length because they have to walk the full length of each long piece to tap it up tight.

The use of short lengths is not a new trend. Short lengths of maple flooring laid over 40 years ago in a 500,000-sq.-ft. floor area in a furniture factory are still intact except for small replacements under extreme load and traffic conditions.

Denims With Checks

CONTINUED FROM PAGE 85

Predryers on a Slasher Give Better Size Penetration

Better size penetration of warps has resulted from adding a Cocker two-drum predryer unit to one slasher. All denim warps are slashed on this slasher. Even though beam-dyed section beams are dried before being placed in the slasher creel, predrying at the slasher has resulted in better-running warps and less shedding of size at looms.

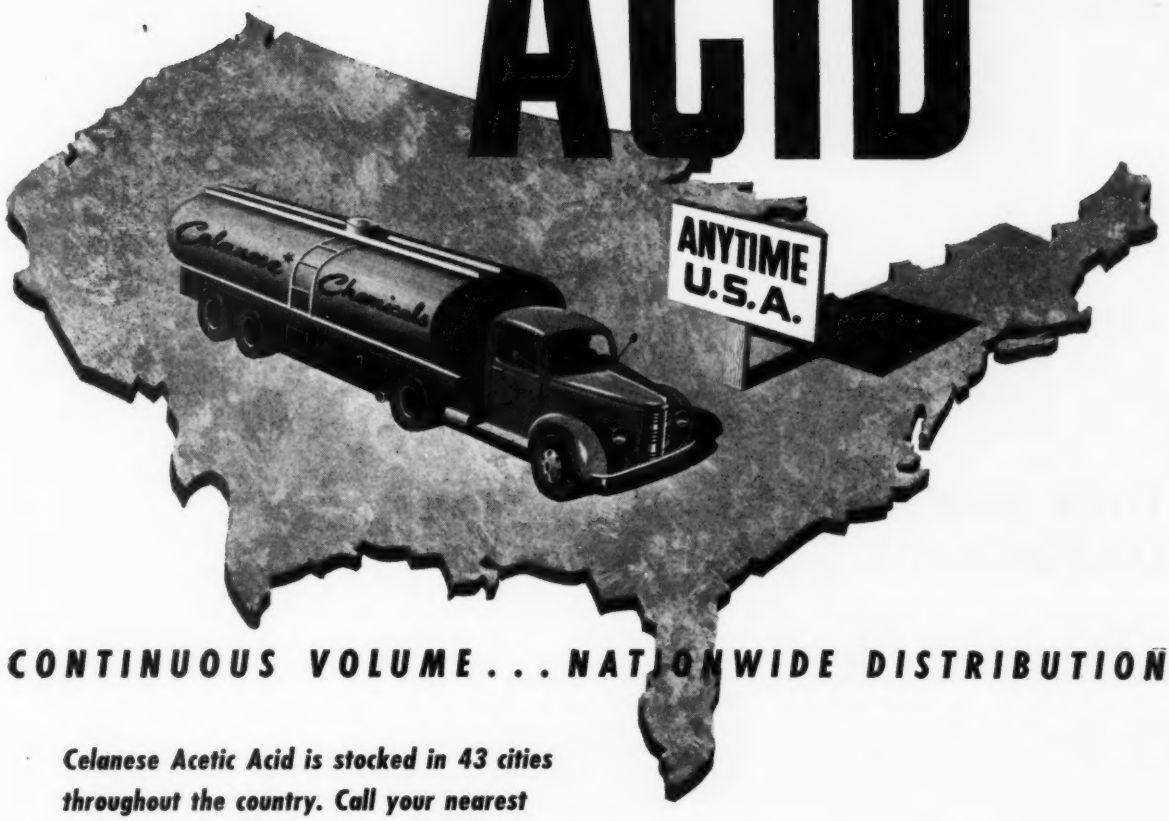
Warps are slashed on 24-in. loom beams. Each beam on 16s yarns (most warps are this number) contains 1,600 yds. divided into 25 cuts of 64 yds. each.

All multicolor denim warps are drawn in with a Barber-Colman drawing-in machine. Tests at Eagle & Phenix show that there are fewer crossed warp ends on drawn warps than on retied ones. There's another advantage, too, in using the drawing-in machine: Drawtex harnesses give little trouble in weaving because heddle and other part breakages are low. There's no hanging of heddles, either, to chafe warp ends.

Filling yarns are rewound from cheeses on Abbott quillers. (All filling yarns at Eagle & Phenix are run on Abbott quillers.) The rewound yarns give more even and constant tension in loom shuttles, and less fur and bristle tension has to be used in the shuttles. As a result, broken filling is

For more information, write direct or use Reader Service post card.

Celanese* ACETIC ACID



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Celanese Acetic Acid is stocked in 43 cities throughout the country. Call your nearest Celanese Sales Office for fast delivery:

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3615 Olive Street . . . . . St. Louis 8, Mo.
607 Market Street . . . . . San Francisco 5, Calif.

Celanese* CHEMICALS

*Reg. U.S. Pat. Off.

CELANESE CORPORATION OF AMERICA, CHEMICAL DIVISION, 180 MADISON AVE., NEW YORK 16, N. Y.

reduced and there are fewer broken picks in the cloth.

Most filling yarns are 16½s. Brass-butt bobbins 8¾ ins. long are used on all denims. All colors of yarn are run side by side at the quiller, and the quiller tenders separate the colors after they're doffed. All colored filling is package dyed.

Mischecks, The No. 1 Defect, Are Checked Twice Each Shift

Denims with checks are woven on C&K C-3 cam looms and on C&K dobby looms. Most styles on the C-3 looms are 2x1 twills with up to four colors of filling running 4x1. Styles on dobby-equipped looms vary and also run 4x1. Both types of looms change bobbins automatically. Both are equipped with multipliers.

Weave-room personnel have to constantly watch all patterns to prevent mischecks. Each drawn warp put in a loom has to have a swatch checked by the designing office before the loom is run.

An empty loom is cleaned and oiled by the oiler. Then a warp man ties on the warp. He builds the pattern chain and box chain and places them on the loom.

A loomfixer starts the warp and checks the woven cloth with a draft before a swatch is removed for the designing office. The weave-room foreman also checks the pattern.

Drafts and all instructions necessary for adding new patterns to looms are furnished by the designing department and are kept in the weave-room office so that both old and new patterns can be checked.

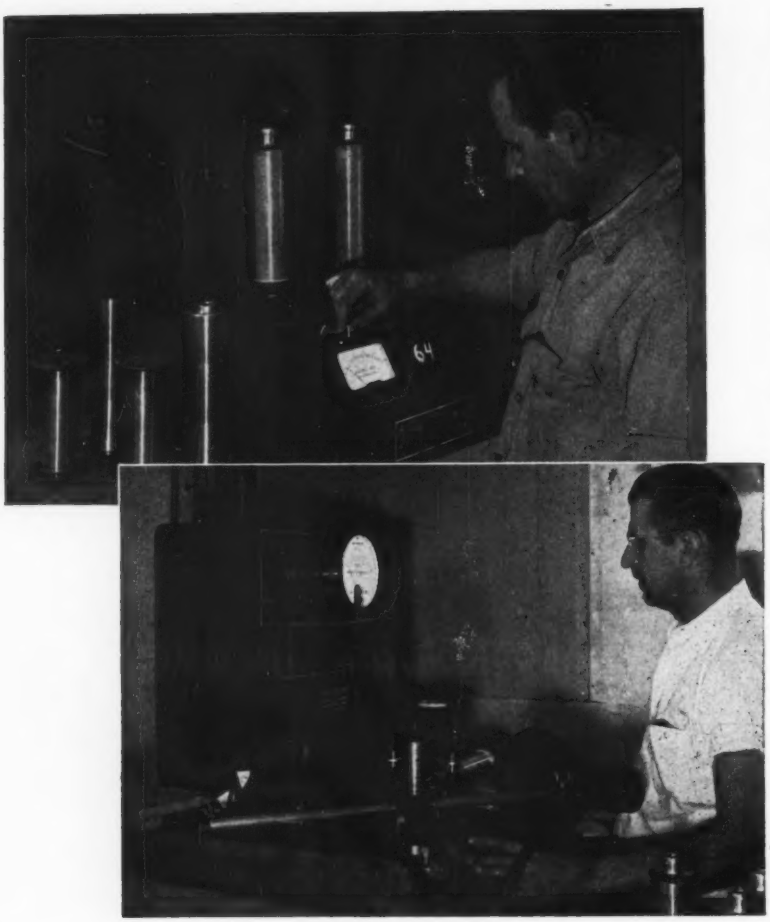
After warps are placed in the looms, the weave-room foreman checks them twice each shift to be sure there are no mischecks. He uses small templates made for each style to check the squareness of each check both lengthwise and widthwise. A variation in warp tension will affect the squareness of the patterns. For this reason, warp tension is adjusted often.

In addition to the two checks made each day by the foreman, weavers and loomfixers also check the patterns with the warp-check templates. After this close checking, the woven cloth can be cut into garments; and any section of any piece of cut cloth will fit into any other section to form a square pattern.

Broken Picks Are Eliminated Through Loom and Shuttle Care

Broken picks, the No. 2 defect, are controlled by correct filling stop-motion settings and by care in preparing the shuttle tension to suit the filling being run.

The C-3 looms have center filling



They put more RPM into your LESTERSHIRE BOBBINS

It will pay you to investigate the performance of Lestershire Bobbins.

Many mills find that these bobbins substantially increase their production.

Lestershire bobbins run true at today's high speeds because Lestershire technicians, equipped with the most modern equipment, test every bobbin for balance to assure maximum performance.

Lestershire bobbins are made of hard, close-grained maple, vulcanized fibre, laminated phenolic, and aluminum in a variety of combinations for a wide range of uses. Included are twister bobbins, take-up bobbins, headless take-up packages and many others.

Bobbins that do not run true cost you money every day in lost production and in shortened bobbin and spindle life.

The proof of a bobbin is in the running. So write us today to have a representative call and arrange for you to make a test of Lestershire better balanced bobbins in your plant.

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Lestershire Spool Division

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Need compact bearings for long service?

here's how leading makers of small gasoline engines get them with NEEDLE BEARINGS

America's best known manufacturers of small gasoline engines specify Torrington Needle Bearings because of their compactness, high capacity and long maintenance-free operation.

Needle Bearings have been *performance-proved* in every type of small two-cycle and four-cycle engine such as those on power mowers, generators, chain saws, materials handling equipment, pumps, compressors and many other types of equipment.

As main bearings on crankshafts, on connecting rods at crankpin and wristpin ends, on reduction units, governing mechanisms, crankshaft counter-balances and camshafts, Needle Bearings, compact in size themselves, contribute toward keeping engine size and resulting weight down. Simultaneously, their ability to retain lubricants for long periods boosts power output and prolongs engine life.

Torrington Needle Bearings have become "standard equipment" throughout industry since their introduction nearly twenty years ago. Wherever high capacity is needed in small space, Needle Bearings can offer superior performance.

The Needle Bearing may be the solution to your anti-friction problems. Why not let our engineers help you find out?

THE TORRINGTON COMPANY
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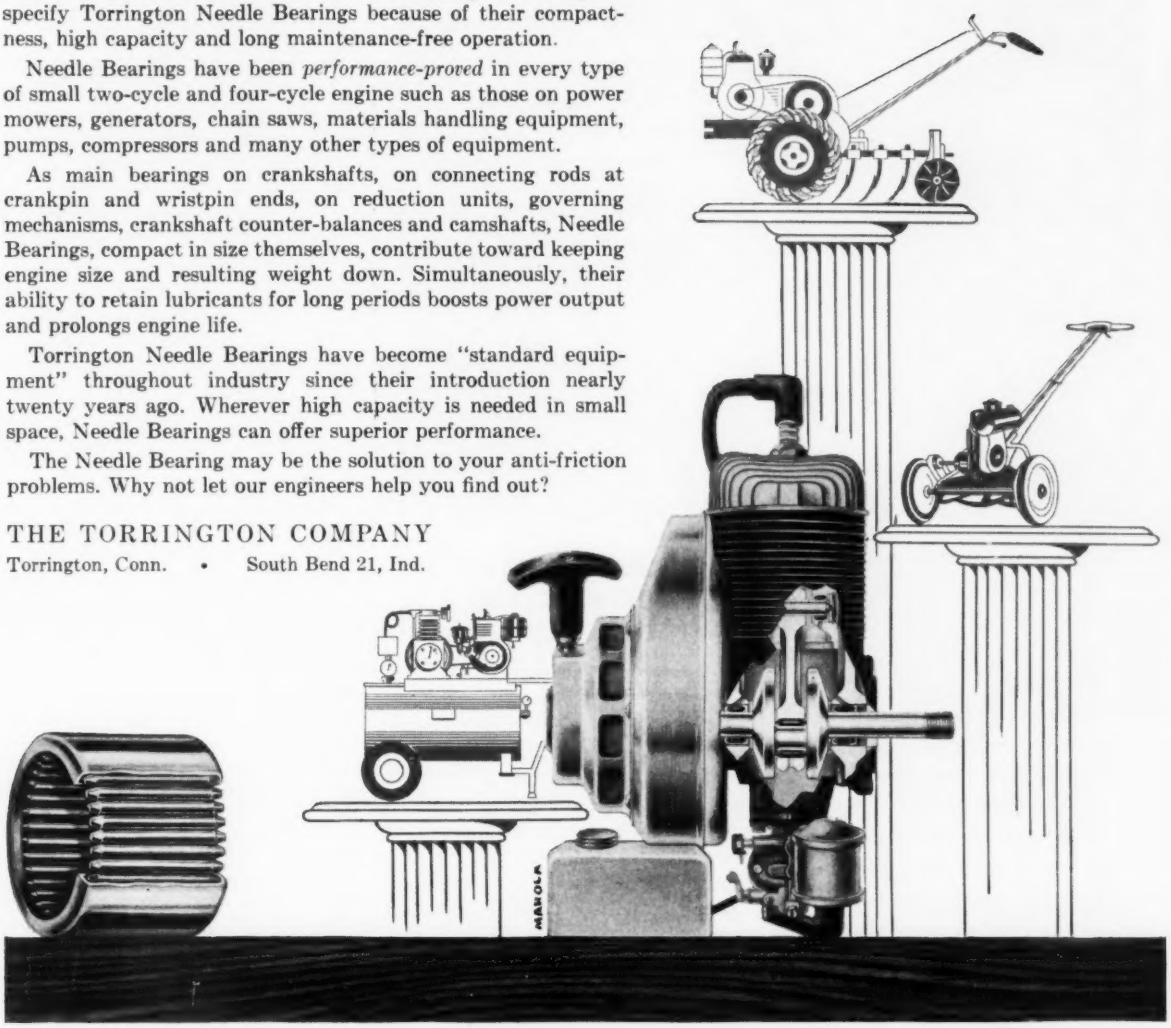

TORRINGTON *NEEDLE* **BEARINGS**

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Trade-marks of leading manufacturers of small gasoline engines who use Needle Bearings.

Only the New
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- COMPLETE DRYING AND CURING UNIFORMITY
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- LESS DOWN TIME MORE PRODUCTION

In every mill where the new Proctor Loop Dryer-Curer has gone into operation it has met with enthusiastic acceptance on the part of mill management and operating personnel. Never before has any machine of this type so completely fulfilled the industry's requirements. Every feature in the design of the new Proctor Loop-Curer has been engineered to meet your needs. See an operating scale model at the Textile Machinery Show in Atlantic City. In the meantime write for Bulletin #394.

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PROCTOR & SCHWARTZ, INC.
PHILADELPHIA 20, PA.

stop motions; the dobby looms have side stop motions. Fewer broken picks are made on the cam looms; but, on the other hand, less kinky filling is made on the looms that have the side stop motions.

Fur and bristles both are run in the shuttles to provide tension for the filling. A strip of shuttle fur half the width of the shuttle is placed the full length of the bottom back half of the shuttle. Another half-width piece is placed at the top front wall of the shuttle from a point near the eye to the beginning of the feeler slot.

A hair bristle pointing forward is inserted at the front of the fur in the back of the shuttle. Another bristle is placed the same way in the front wall of the shuttle at the top.

Flannel strips are used to separate the filling at the drop-box end of the looms to help prevent broken filling and also to help control jerk-backs. Blanket cloth for slasher-roll covers is sometimes used for the strips. Billiard-table covers make the best ones, though, and last several times longer at Eagle & Phenix than any other type of flannel used.

Harnesses level at 2 ins. before the beat-up of the cloth. Box motions start changing at the same time.

Cloth is inspected in the cloth room on flat tables and is kept in rolls. The cloth runs over Masonite-covered table tops with a concave section cut out to let the inspector reach over the full width of the cloth to remove jerk-backs or other minor defects. The cloth is moved across the table with a motor-driven take-up roller.

If cloth does not appear to be seconds, it is inspected only once. Second-quality cloth is regarded by a grader and is charged as seconds to the weaver, loomfixer, and weave-room foreman.

Second-quality cloth is reported to the weave-room foreman immediately on a check slip. He is required to check the loom, write on the report what loom fault is causing the defect, and have the loomfixer fix the loom. The cloth-room personnel also keep the weaveroom foreman posted on all looms making repeat rolls of bad cloth.

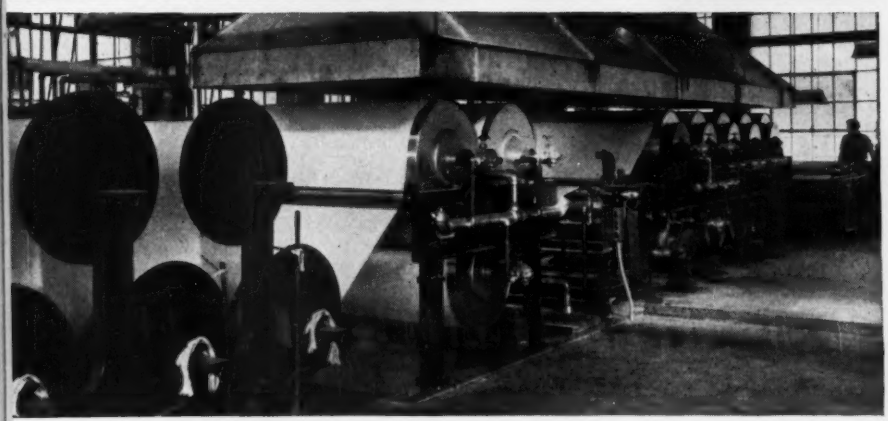
The denim cloth is also finished at Eagle & Phenix. In addition to other finishing, all denims with checks are processed in a Sanforized machine and are mercerized.

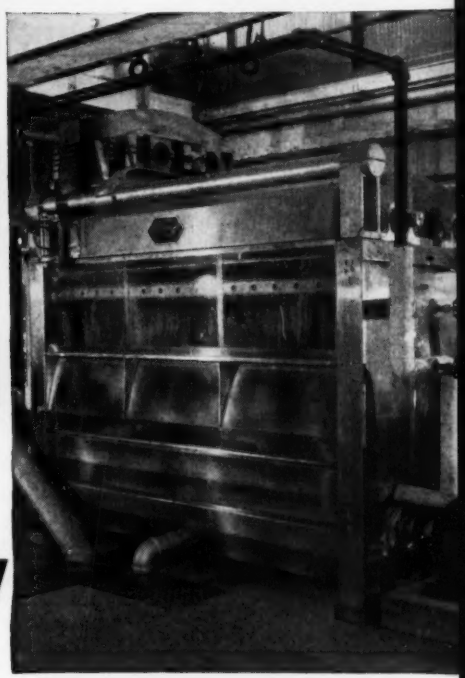
YOUR FRIEND IN NEED

Your Buyers' Guide and Reference Issue is like a friend ready to help solve your buying and production problems. KEEP IT HANDY . . . ready for instant use in your mill.

BEAM DYEING OPERATIONS at Rosemary Manufacturing Company. The beams at the left, the kiers in the center and the dye mixing tanks at the right are all Stainless Steel. The beams and kiers were manufactured by Obermaier Stienen, American Standard Fabricators, Corp., New York, and Gaston County Dyeing Machine Company, Stanley, N. C.

THIS TENSITROL ROPE WASHER, which handles cloth after mercerizing, requires only 10% as much maintenance as the wooden unit it replaced. The patented Tensitrol® washer was manufactured by Rodney Hunt Machine Co., Orange, Mass.





ONE OF THE THREE SLASHER UNITS at the Roanoke Rapids mill. Yarn is unwound from the Stainless beams at the left, is pre-dried on Stainless cans, passes through the Stainless size box and then over Stainless dry cans again. The units were fabricated by Cocker Machine & Foundry Company, Gaston, North Carolina.

Rosemary Manufacturing Company dyes its cotton damasks in non-contaminating STAINLESS STEEL equipment

• In its dyeing operations, Rosemary Manufacturing Company, Roanoke Rapids, N. C.—a large producer of table damask as well as other cotton and rayon goods—takes every possible step to protect the trueness of as many as 400 different shades. And one of the most important steps is the use of Stainless Steel wherever dyestuffs or cotton and rayon goods are processed.

From the pilot dye plant, where the highest degree of control and freedom from contamination is necessary, to beam dyeing operations, the dense, smooth surface of Stainless Steel prevents carryover and makes cleaning easy.

These Stainless Steel slasher units are in operation here, with Stainless Steel dry cans ahead of and behind the Stainless size box. Replacement of a copper lined iron starch tank with one of Stainless Steel eliminated rusting and the lower maintenance costs have more than offset the cost of the replacement.

Other Stainless Steel equipment in the dyeing operation includes a dye range, an ager, a rope washer and dye-becks. The Stainless Steel washer requires only 10% as much maintenance as the wooden one it replaced.

The dye plant is only one place where Stainless Steel reduces costs, and, at the same time, gives the product the greatest protection possible. Take advantage of Stainless Steel, and when you do, be sure perfected, service-tested USS Stainless Steel is used.

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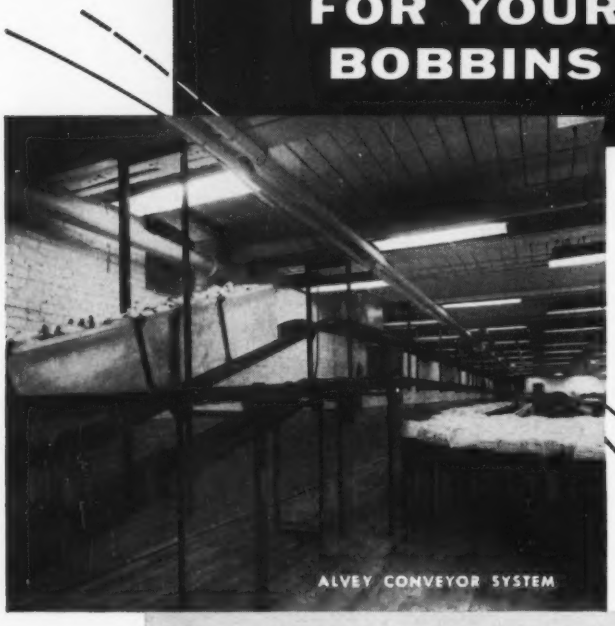

...this double deck ALVEY CONVEYOR SYSTEM carries full bobbins on the top run and empties on the lower run

At Alvey, every conveyor problem is special. Every system is exactly tailored to your particular needs... designed by the conveyor industry's top engineers to reduce costs and speed product handling. An Alvey Engineer is always available. He will visit your plant and evaluate your problem. Write for appointment.

Every time you **MAN**handle a package, you add to the cost and nothing to the value; therefore, put your packages on Alvey Conveyors that are engineered to fit your individual requirements.

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BRANCH OFFICES IN PRINCIPAL CITIES

Textile Equipment News

CONTINUED FROM PAGE 150

Speed is reduced just before shogging for the fashioning course to 45 courses per minute, and full speed is automatically resumed after fashioning. This speed is controlled by a variable-speed motor, controlled by a cam and lever mechanism.

Attachments are available for three-color striping and splicing. A course counter is provided. There are 8-, 10-, and 12-head units for bodies, 16-head units for sleeves and small garments. Regular gauges: 12 to 33. Width of heads are 24, 26, 28, or 30 ins. for body machines, 18 or 20 ins. for sleeves.

Circle T-18 on Reader-Service Card

Mixers Are Designed For Dyehouse Use

MIXER is designed to disperse dyes in carrying agents. Besides this laboratory unit, pilot-plant and production sizes are available.

The Jet mixers developed by David E. Gould are being manufactured by Hermas Machine Co., Hawthorne, N. J. The mixers were developed for wetting out and deflocculating dyes and pigment dispersions in liquid carrying agents in viscosities from water-thin to 30,000 centipoise. They operate at peripheral velocities above 70 ft. per sec. in tanks, barrels, drums, and kettles.

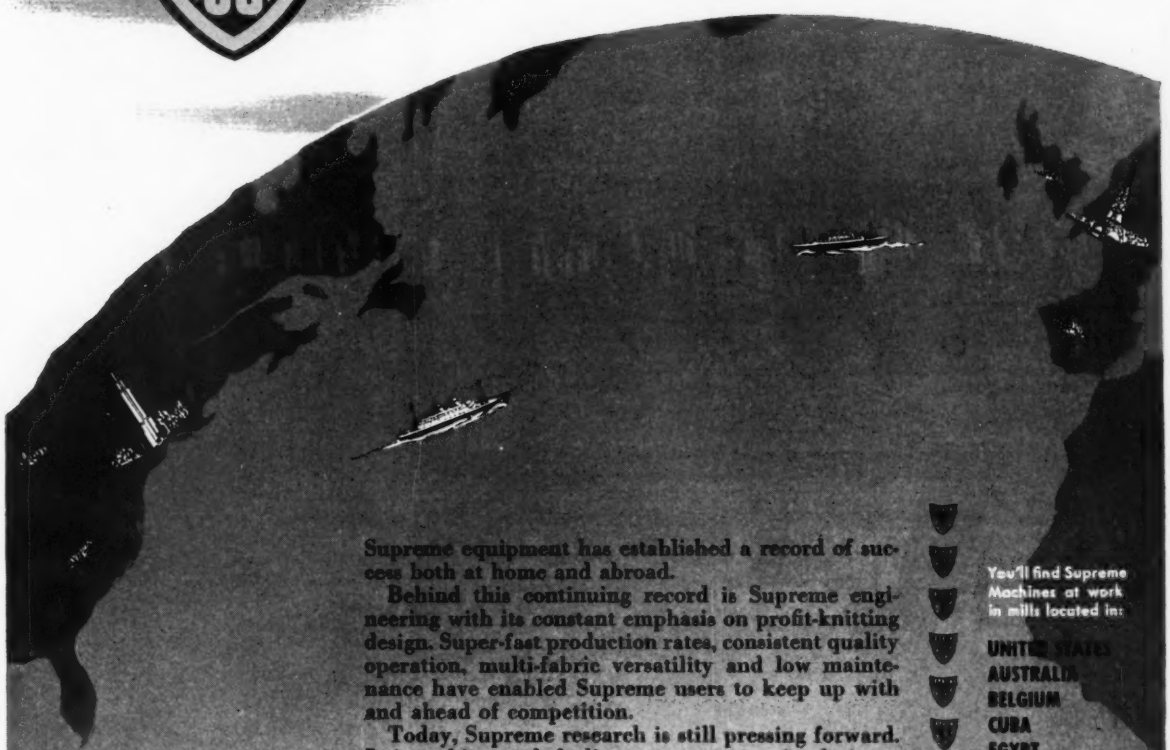
All moving parts are replaceable from stock parts and are easily accessible for cleaning. Rotors come in a variety of pitches for different viscosities, and bushings are available in stainless steel, nylon, or Teflon.

The mixers are made in laboratory, pilot-plant, and production sizes.

Circle T-19 on Reader-Service Card

SUPREME KM CO

A Sign of Successful Knitting throughout the World

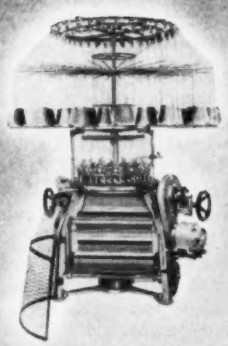


Supreme equipment has established a record of success both at home and abroad.

Behind this continuing record is Supreme engineering with its constant emphasis on profit-knitting design. Super-fast production rates, consistent quality operation, multi-fabric versatility and low maintenance have enabled Supreme users to keep up with and ahead of competition.

Today, Supreme research is still pressing forward. It is seeking and *finding* new ways to give knitters more production per square foot of space, more poundage per operator, more profit per day.

When you modernize, be sure to get the facts on the latest Supreme developments.



Another Important Supreme Advance in Profit-Knitting Design

NEW SUPREME C-SAAF STRIPER DOUBLES PRODUCTION ...GIVES GREATER PATTERN VARIETY

New, improved variable stripe and pattern-placing jersey knitting machine has 32 four-color striping boxes, 32 pattern wheels and 32 pattern placers and other major improvements.

The Model C-SAAF is a super-improved version of Supreme's Model SAAF, the original patented variable striper with stationary head and revolving cylinder. The new model is a one-machine knitting mill with double the number of striping feeds, a new striping box design, new scissor-type synchronized "no-waste" cutters and an improved knitting elements system.

Ask for further details, today.

You'll find Supreme Machines at work in mills located in:

UNITED STATES
AUSTRALIA
BELGIUM
CUBA
EGYPT
ENGLAND
FINLAND
FRANCE
GERMANY
GREECE
ISRAEL
MOROCCO
NEW ZEALAND
NORTH IRELAND
NORWAY
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Southern Representative and Showroom:
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SK-172

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Immediate shipment

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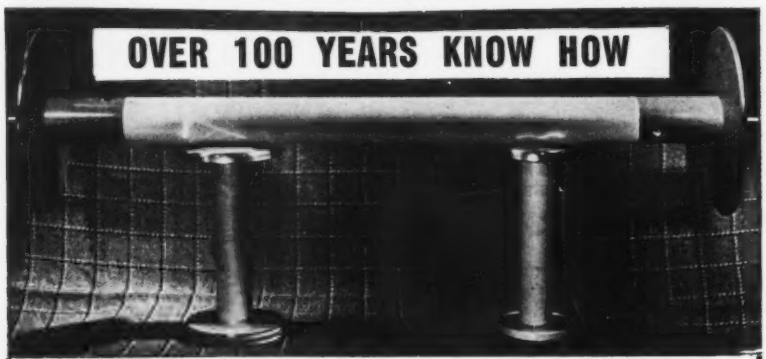
Joseph T. Ryerson & Son, Inc. Plants: New York, Boston, Philadelphia, Charlotte, N. C., Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco, Seattle, Spokane.



IT'S PARKS FOR SPOOLS

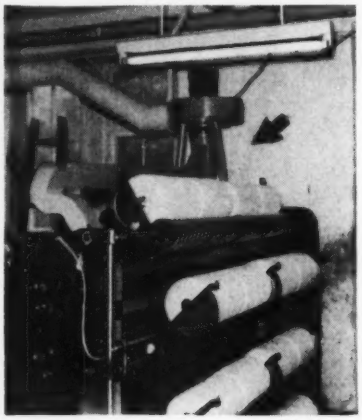
Over 100 years manufacturing spools and bobbins. Jack, dresser, mule, card and condenser spools with fibre, or wooden heads. Also aluminum barrels.

FOR COTTON	FOR WORSTED	SPOOLS FOR	WARP BEAMS	PLASTIC YARN
Warper and Twister Spools	Roving, Twister, Speeder and Drawing Spools	Carpet, Tire Cord, Cordage, and Tape Mills	for Narrow Fabric	SHIPPING SPOOLS

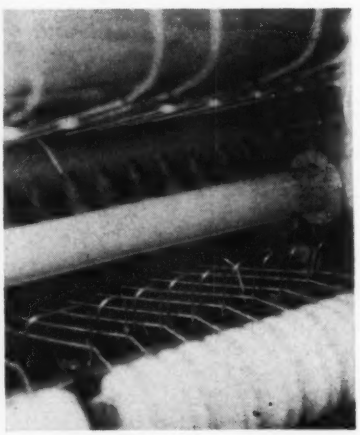
Spools Equipped with Anderson Rim or Boynton Shields Up to 6" Head Diameter if Desired. Also with Dixon Drivers or Brass Bushings.

M. H. **PARKS** COMPANY
Est. 1851 WINCHENDON, MASS.

Woolen-Card End Collector Has a Nozzle for Each End



SUCTION DUCT connects the waste-end-collection nozzles to the feeder. There is a collection nozzle for each end.



RUBBER NOZZLES collect broken ends before they can do damage to the condenser or cause double ends.

A pneumatic suction device for tape condensers on woolen cards has been developed by The Thoma Co. and is available in the U. S. from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. Called Card-Tho-Mat, the device has a rubber collecting nozzle for every end. Each broken end is collected by its own nozzle and carried through a suction duct back to the feeder.

Advantages: broken ends cannot do damage to the condenser, and double ends are prevented.

The suction ducts underneath the jack spools can be easily removed when the cards are cleaned, and aprons can be replaced without difficulty.

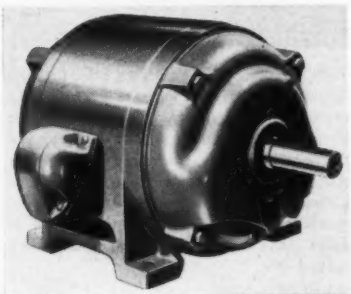
Circle T-20 on Reader-Service Card

Fork Extension for Truck Extends Its Stacking Range

REMOVABLE FORK EXTENSIONS allow loads to be stacked several deep. With the attachment, which is made by The Raymond Corp., 95-119 Madison St., Greene, N. Y., this truck can right-angle 48-in. loads from 72-in. aisles.

Circle T-21 on Reader-Service Card

U. S. Electrical Unveils Its New Dripproof Motor



NEW DRIPPROOF MOTOR made by U. S. Electrical Motors, Inc., Box 2058, Los Angeles 54, Calif., conforms to the latest NEMA standards. Available in frame sizes 182 and 184, the motor meets the same standards as its larger predecessor in temperature rise, torque, and overload capacity.

Circle T-22 on Reader-Service Card

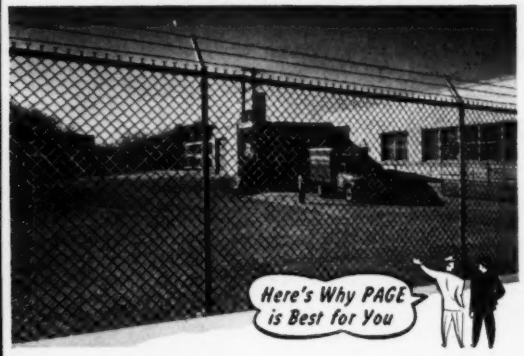
Full-Fashioned Sweater Machines

Full-fashioned sweater-knitting machines are being converted from Reading full-fashioned hosiery machines by United Knitting Machine Co., Philadelphia, Pa. The machines are 12-head sections, 21 gauge, with a 31-in. head and 14 needles per inch; they are said to knit up to 65 courses per minute on some yarns. Steinberg Brothers, Inc., Brooklyn, N. Y., is handling the machines.

Circle T-23 on Reader-Service Card

PAGE FENCE - *Since 1883*

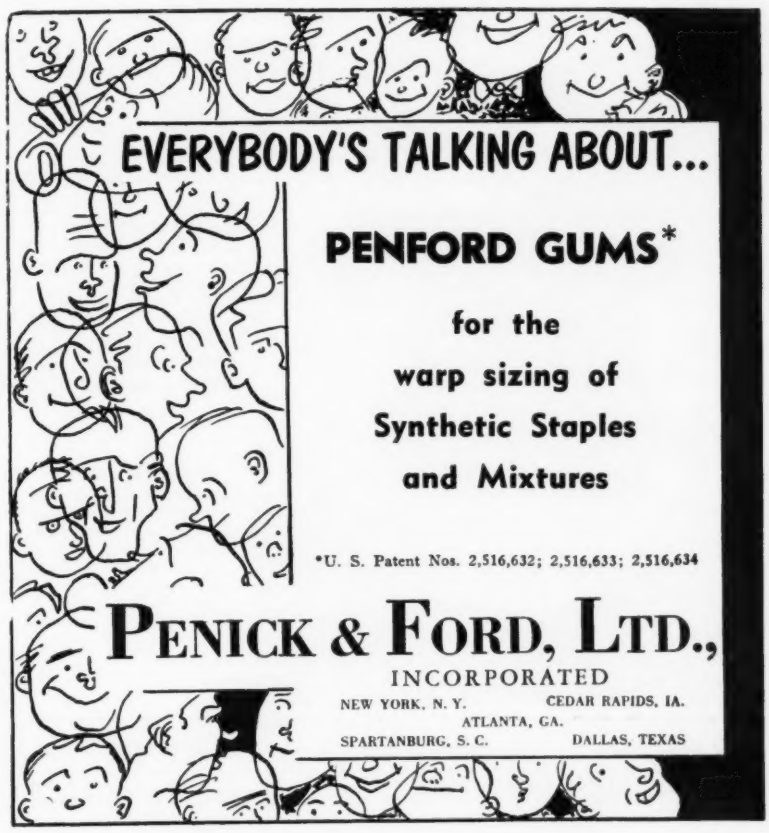
• AMERICA'S FIRST WIRE FENCE •



• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you—

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.



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Control Center

Modern way to control unit heaters

In this handsome, prewired cabinet, you house all necessary controls for a unit heater—thermostat, disconnect switch with overload protection, summer-winter switch, pilot light, and terminal block. All field wiring leads to the numbered terminal strip. You reduce installation costs substantially. You get more, for less.

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... for surface mounting. Adapter ring for flush mounting optional. Cabinet finished in attractive hammered gray.

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For Bulletin No. T-1 ... gives you complete data plus typical wiring diagrams.

THE YARNS YOU BUY GO INTO THE CLOTH
... not into waste!

TOMPKINS D-2

DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE

SEE FOR YOURSELF ... let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!

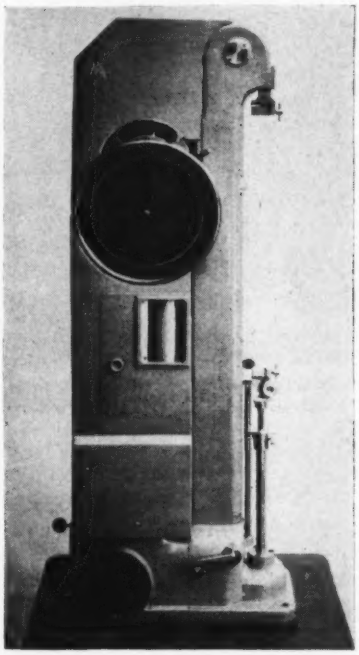
OTHER TOMPKINS MACHINES

BEEF BAG KNITTER | HOCKEY CAP KNITTER | MULTIPLE FEED KNITTER

TOMPKINS BROS. CO. • Syracuse 4, N. Y.

Four More Testing Instruments

The four testing instruments illustrated here are available from Karl Frank GmbH, Weinheim-Birkenau, Germany.



STRENGTH TESTER measures the tenacity and elongation of a sample to rupture. The instrument has four ranges, each with two load scales; maximum load is 100 kgs. The electromagnetically controlled elongation meter is said to be especially suited to testing fine yarns. Pretensioning is controlled by a graduated rotary drum. Testing speed is constant, and a graph-recording unit can be attached.

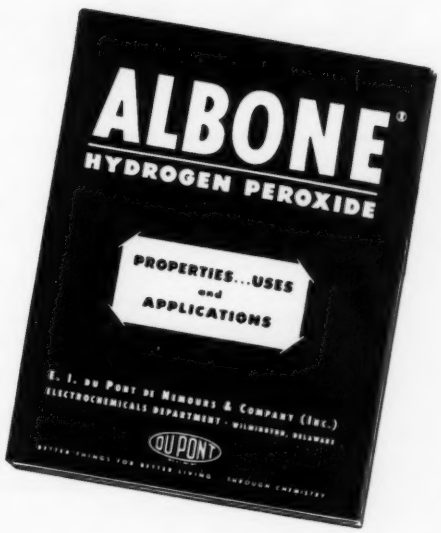
Circle T-24 on Reader-Service Card

YARN-CHAFING TESTER helps to predict the performance of yarn in fabrics by rubbing two pieces of yarn together to breaking. Such tests can be reproduced, and the results can be defined mathematically. One-

How can I use "ALBONE" 35 and 50 interchangeably?

What are the preferred construction materials for peroxide storage and bleaching equipment?

You'll Get the Answers to These and Other Questions in This New Reference Book...



This is the practical reference book for the textile processor, the man who is using "Albone" hydrogen peroxide to bleach cotton, wool, rayon and silk or in oxidation of vat colors.

You'll find information on economical peroxide bleaching...testing of bleach baths...efficient everyday handling of hydrogen peroxide in use and storage . . . and typical textile processing equipment, as well as other useful data.

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(HYDROGEN PEROXIDE)

"Albone" 35 . . . hydrogen peroxide, 35%
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

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Electrochemicals Department
Wilmington 98, Delaware

Please send me your new reference book on "Albone" hydrogen peroxide.

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*Firm*_____

*Address*_____

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COOLER FOUNTAIN NEWS

VITREOUS CHINA TOPS NOW AVAILABLE

Popular 15-inch Line of Halsey Taylor Cooler Fountains now with Vitreous China Tops

Industrial users of Electric Coolers prefer the space-saving 15-inch size. Therefore, it's welcome news to know that Halsey Taylor now furnishes this popular size with Vitreous China Tops.

Gleaming vitreous china is always easy to keep clean, and—with the Halsey Taylor distinctive two-stream projector — these coolers are the most hygienic and health-safe you can buy.

See our catalog in Sweet's or write!

Stainless Steel Tops Also Available in 15-inch Cabinets or Cafeteria Models

THE HALSEY W. TAYLOR CO., Warren, Ohio

Halsey Taylor

COOLER FOUNTAINS

F-31

MICROMETRIC products

For Quality and Uniformity

Comb and Gill Box Aprons
French Rub Aprons
Condenser Aprons and Tapes
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Exclusive Manufacturers of Leather Textile Specialties "For Those Who Want the Best"

Finest selection of hides available . . . choice of tannages . . . Thickness gauged to meet the most exacting requirements . . . excessive stretch removed . . . flexible waterproof splices . . .

As specialists in Drafting Aprons for the Worsted System, our workmen are experienced in selection and matching of hide areas to give "balance" and long life.

A trial order will please you with our service.

The HAY Line TEXTILE LEATHERS

JAMES E. HAY LEATHER CO., INC.

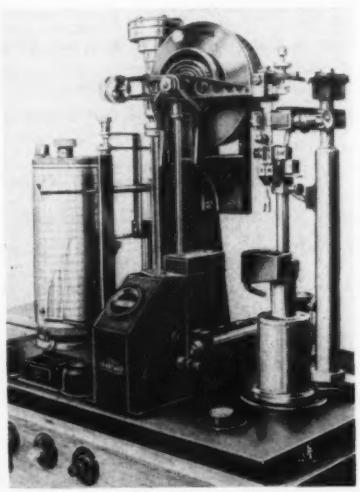
244 SMITH STREET • LOWELL, MASS.

tenth of the breaking load is recommended as the load stress. Rubbing speed is a constant 200 double-rubs per minute. Formulas and directions for making a rubbing-strength diagram can be furnished.

Circle T-25 on Reader-Service Card

ABRASION-RESISTANCE TESTER to help predict the performance of fabrics has a variety of attachments that test various factors. Significant factors that are measured are rate and pressure of abrasion, stretch of sample, and moist, wet, edge, and yarn abrasion. A suction device can be attached to take away fuzz. Mathematical relations of the factors can be determined.

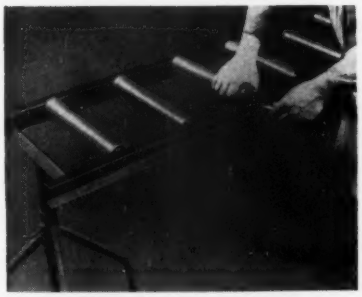
Circle T-26 on Reader-Service Card



FIBER TESTER measures the strength and elongation of all textile fibers. Fibers are cut to 25 mm.; 40 fibers should be tested. Measuring ranges are 0 to 20, 0 to 200, and 0 to 2,000 grams. Breaking speed is adjustable from 15 to 300 secs. The stylus arms have individually supported lifters. Tests of fiber recovery and plastic deformation under heat are important uses of the instrument.

Circle T-27 on Reader Service Card

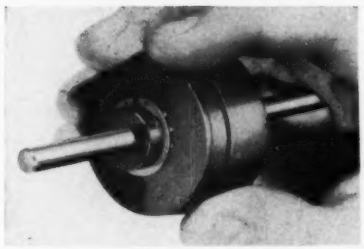
Rollers Can Be Respaced On Prepunched Conveyor



PREPUNCHED CONVEYOR FRAMES are being supplied by Sage Equipment Co., 30 Essex St., Buffalo, N. Y. With these frames, rollers can be repositioned to get different roll spacings.

Circle T-28 on Reader-Service Card

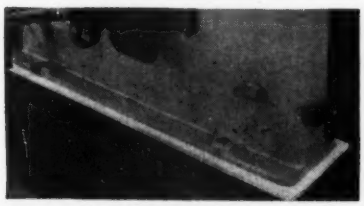
Brake and Clutch for Small Electrical Equipment



ELECTRIC BRAKE AND CLUTCH for small electrically operated instruments and machinery has been developed by Warner Electric Brake & Clutch Co., Beloit, Wis. The units have high-speed engagement and release and are adaptable to starting, stopping, indexing, rapid cycling, synchronizing, and torque limiting. They require less than 3 ins. of shaft space.

Circle T-29 on Reader-Service Card

Antivibration Floor Pads Are Resilient, Cheap



ANTIVIBRATION FLOOR PADS made of layers of cork and sisal fiber bonded with Bakelite vinyl resin are being produced by Clark-Cutler-McDermott Co., Franklin, Mass. The pads can be installed under a 3,000-lb. cotton loom for about $9, including labor, material, and production-time loss. A waffle-grid surface prevents movement. In a deflection test at 2,000 lbs. per sq. in., the pads returned to 99% of their original thickness. Standard pads can be cut to fit most industrial equipment.

Circle T-30 on Reader-Service Card

let the *right* light in

keep the *wrong* light out

Ra-Tox wood slat Ventilating Shades raise and lower to meet any outside daylight condition. You can let the *right* light in yet keep out sun glare and troublesome reflections. Ra-Tox Shades give draft-free air circulation...keep rooms up to 14° cooler in summer...act as a shield against heat loss in winter. They're low in cost, easily maintained, and last almost as long as the windows. Wide choice of colors in any size.

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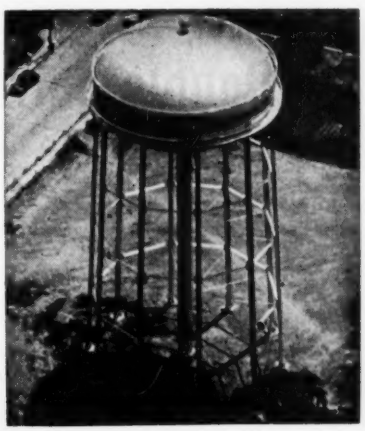

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Established 1854

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ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

ALL TEXTILE MILLS

INTERESTED IN QUALITY
AND ECONOMY ARE
SAVING MONEY
EVERY DAY

HOW? BY USING THE FINEST LUG SUPPORTS EVER MADE FOR 1½" AND 2" LUG STRAPS.

These lug supports are very light in weight, and give the highest possible strength and wear, because they are cast from the best known ALUMINUM ALLOY—copper-silicon and magnesium. Light, strong, and highly resistant to wear, they increase the life of picker stick and lug strap. Simple construction; no complicated parts. Costs little and does a fine job.

WEST SIDE FOUNDRY COMPANY
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In view of present day difficulties in maintaining your own mailing lists, our efficient personalized service is particularly important in securing the comprehensive market coverage you need and want.

Ask for more detailed information today. You'll be surprised at the low over-all cost and the tested effectiveness of these hand-picked selections.

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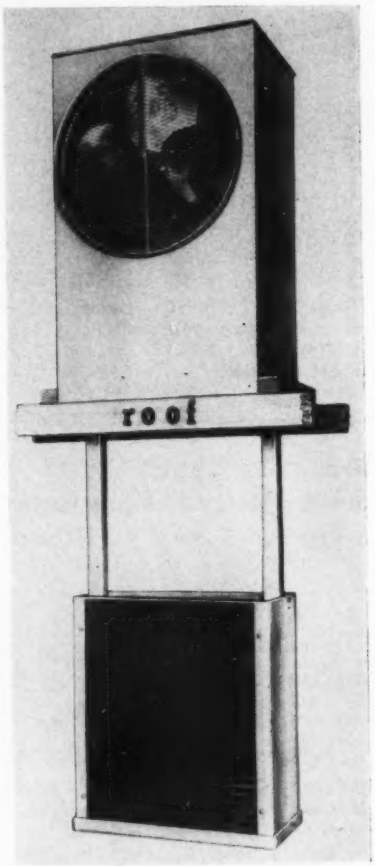
Air-Conditioning Unit Is Self-Contained



TWO-TON AIR-CONDITIONING UNIT has the freon compressor and condenser and the fan in a roof box, and the evaporator box hangs down into the room. The unit, made by Kritzer Products, 1234 W. Le Moyne St., Chicago 22, Ill., requires no refrigerating connections or water drains, and it can be installed by a plant maintenance crew. It is suited to one-story buildings or the top floor of multistory buildings.

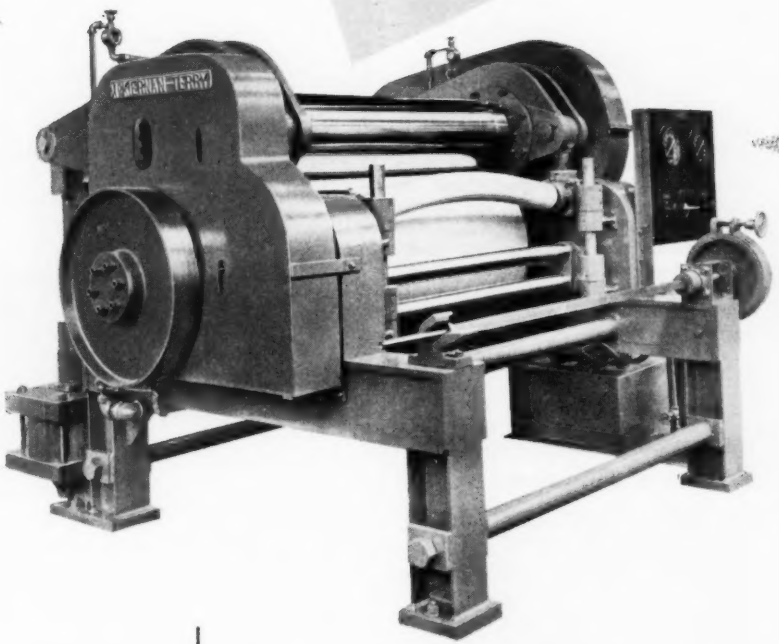
Circle T-31 on Reader-Service Card

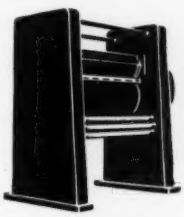
Safety-Switch Enclosure Is Made of Lead-Plated Steel

SAFETY-SWITCH ENCLOSURE made of lead-plated sheet steel is being produced by Trumbull Components Dept., General Electric Co., Plainville, Conn. The enclosures are designed for outdoor use and for humid, dust-laden, or corrosive atmospheres. They are lighter than cast-iron enclosures.

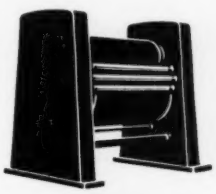
Circle T-32 on Reader-Service Card

A SINGLE CALENDER FOR 3 SERVICES

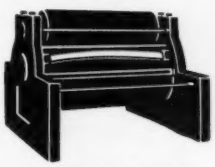




FRICTION



SCHREINER



EMBOSSING

Designed Especially for Resin Finishes

Just change the rolls and gearing of this McKiernan-Terry Multi-purpose Calender, and you convert it from one service to another. You have your choice of Friction . . . Schreiner . . . Embossing, within a few hours . . . *a functional flexibility possessed by no other calender.*

With a battery of these machines, you can adapt *all* of them as necessary for your production needs . . . no machines need stand idle while work piles up for others, as in the case of non-convertible calenders.

And this convertibility is but one of the many *exclusive* advantages of the McKiernan-Terry Multi-purpose Calender. Its bottom-roll accessibility, its provision to maintain uniform pressure across roll faces, its high-temperature oil seals, its readily removable roll bearings with housings are some of the additional features that make this machine your best calender buy for highest quality production, lowest operating cost, and least maintenance expense.

Write for full information. MK605

McKIERNAN-TERRY CORPORATION • *Manufacturing Engineers* • Harrison, N. J.

McKIERNAN-TERRY Multi-purpose Calender

THICK & THIN . . . FLAT FILAMENT

YARN DYED ACETATE

REGULAR FILAMENT

Distinctive and original colors all selected by you — Let *your* selection of shade sell *your* goods — All shades available all the time — Big volume — Prompt delivery.

Jobbers of Natural Acetate & Rayon Yarns

Atlantic Rayon CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

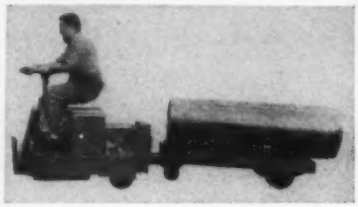
NEW YORK REPRESENTATIVE

Empire State Bldg.

Fifth Ave., New York 1

★

Hydraulic Lift



TRACTOR LIFT has a simple electric hydraulic unit for lifting and lowering semi-skids. Made by Market Forge Co., Everett 49, Mass., the lift works from a push-button control. The tractor is not altered.

Circle T-33 on Reader-Service Card

Conveyors for Corrosive Service

CONVEYOR SECTIONS made with a nylon bearing turning on a stainless-steel axis are made by Metzgar Conveyor Co., 455 Douglas St., Grand Rapids, Mich., for conveyors that operate under brine, alkali, or acid conditions. Ball-bearing conveyors often fail under these conditions. The Nylo-Rolls have survived a boiling test in a 75% solution of Oakite.

Circle T-34 on Reader-Service Card

Improved Washer Takes Variety of Glassware

LABORATORY-GLASSWARE WASHER handles a wide variety of glassware from oversize graduates to micro-pipettes, including odd-shaped funnels and flasks. The washer is an improved model of the Charlab washer made by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. A new series of glassware baskets improves the washer's versatility.

Circle T-35 on Reader-Service Card

F&E GOES TO THE SOURCE OF BAD SMELLS!

GIVES OFF FRAGRANCE WHILE DEODORIZING

WHILE transforming foul washroom odors into new, invisible, odorless compounds, F. & E. gives off the fragrance of genuine eucalyptus oil. At the same time, it kills many of the bacteria which produce ammonia and other rank gases.

USE F. & E. SOLUTION around toilets and urinals . . . for flushing garbage receptacles and sick room accessories . . . for dressing room benches and lockers . . . wherever agreeable, high-speed deodorization is required.

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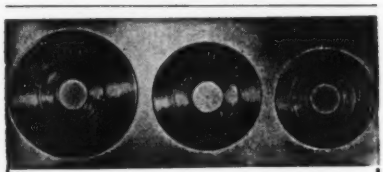


Wayne Traverse Wheels for use on your Universal No. 90 winders, made of *hardened tool steel* cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

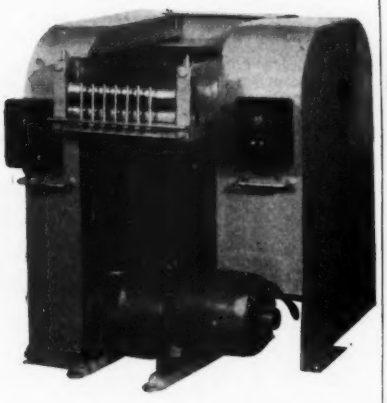
Ask for sample and prices

WAYNE MFG. CO.

HONESDALE, PA.

HERE'S THE MACHINE WITH WHICH TO

Cut Precision Flock



This Taylor Stiles Cutter is used by most manufacturers of precision flock, because it has the mechanical features they require to produce flock to ½ mm or 1 mm without "grandfathers". Naturally manufacturers do not divulge details of their processes which depend on the material used, its pretreatment and the method of feeding to the cutter.

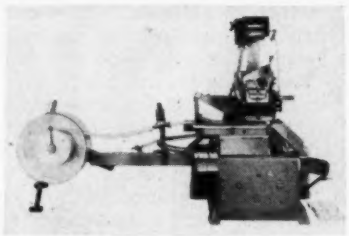
So we can only ask you to examine this machine which has the inherent accuracy to produce precision flock.

Write for description of Taylor-Stiles cutter for your specific requirements.

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

15 Bridge Street Rieglesville, N. J.

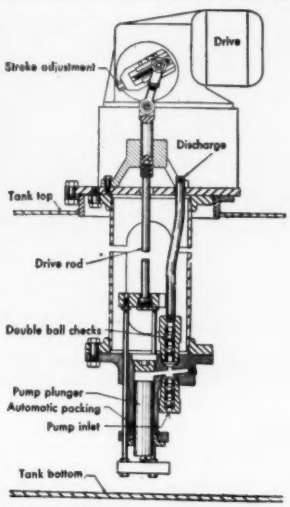
Ticket-Marking Machine Features Accurate Printing



NEW MARKING MACHINE for printing notched tickets, tags, and labels in rolls, fan-folded or in strips, has been introduced by Markem Machine Co., Keene 40, N. H. The feature of the machine is a positive-feed mechanism that insures registration. Production is 80 to 100 tickets per minute; maximum imprint is 2x2½ ins.

Circle T-36 on Reader-Service Card

Controlled-Volume Pump Operates in Corrosive Liquid



SUBMERGED PUMP with no diaphragm or open seal is available from Milton Roy Co., 1300 E. Mermaid Lane., Philadelphia 18, Pa. The Mersemetric pump can be submerged in a storage tank of concentrated sulfuric acid. Capacities range from three milliliters per hour to 400 gals. per hr., pressures up to 1,000 lbs. per sq. in.

Circle T-37 on Reader-Service Card

Alarm Tells When Magnetic Separators Are Full

An alarm system that signals when magnetic separators need cleaning is available from Eriez Mfg. Co., Erie, Pa. Called Magnalarm, the control measures the amount of tramp iron and operates any standard type of alarm—lights, bells, or buzzers. The small amount of current needed does not affect the magnetic field of the separators.

Circle T-38 on Reader-Service Card

Test moisture content *in* 3 *seconds* with Moisture Register!

You get *accurate*, almost instant, moisture content readings in **wool, cotton, rayon, nylon—practically any type of textile**—when you use Moisture Register Model PD-1 or Model K-2.

Either model gives you "on-the-spot" readings with guaranteed accuracy. They're simple to operate, require no technical knowledge or skill, weigh only 6 pounds, easily portable.

Model PD-1 tests textiles in loose or compressed forms with 3" penetration. Model K-2 tests cones, beams, rolls and similar forms.

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Electric Fork Truck For Close Operations

A new low-clearance, narrow-width electric fork truck, called the Safety Silhouette truck, has been announced by Yale Materials Handling Div., The Yale & Towne Mfg. Co., Philadelphia, Pa. Designed for over-the-road vehicle loading, the truck simplifies pallet loading in any tight space.

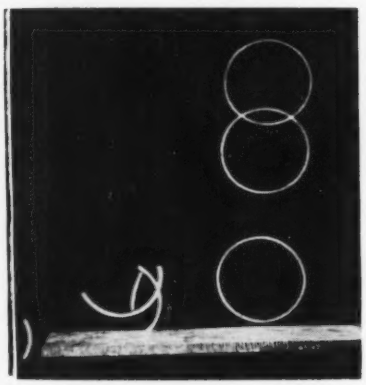
The mast height is only 68 ins., but the operator's head is always below the mast limit.

Lift, tilt, and attachment controls are centralized and mounted beside the steering column in easy reach of the operator.

Available in 2,000- and 3,000-lb. capacities, the truck is powered by a 15-kwh., 30-v. battery—ample for a full 8-hr. shift of operation at peak load.

Circle T-39 on Reader-Service Card

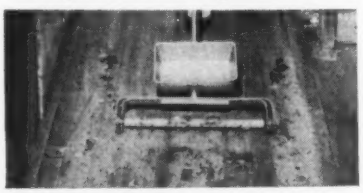
Ductile-Iron Pipe Bounces



DUCTILE-IRON PIPE SECTION (right) bounces when it is dropped from 20 ft. Cast-iron pipe section (left) shatters. The ductile iron, a product of The International Nickel Co., 67 Wall St., New York, N. Y., is said to have a variety of applications in the textile industry.

Circle T-40 on Reader-Service Card

Sweeper Has Magnetic Roll



MAGNETIC SWEEPER picks up metallic objects from the floor. The magnetic element, available in 8- to 32-in. widths, can be detached to remove the collected metal (the tray is used as a temporary trash can); and it can be used for such purposes as removing metal from tanks filled with liquid and other odd jobs. A neoprene ring aids cleaning the element. Eriez Mfg. Co., Erie, Pa., makes the Sweeperette. Prices start at $34.50.

Circle T-41 on Reader-Service Card

For complete protection surround your property with a Stewart Chain Link Wire Fence—cover windows and skylights with wire guards—place steel folding gates at doors—protect tools, materials, etc., with wire mesh partitions. Stewart literature tells the whole story. Write for it today. Please mention products in which you are interested.

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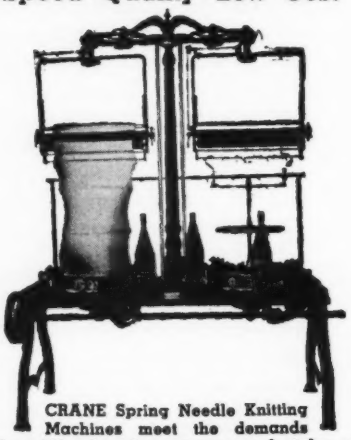

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Herr Conical Rings have controlled lubrication, which means clean yarn . . . ordinarily a difficult attainment when handling spongy yarns such as Helanca. Herr Conical Rings are also popular because they stop yarn breakage, permit heavier doffs and produce smoother yarn.

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30s Cotton Yarn

CONTINUED FROM PAGE 101

reworkable card waste dropped to 2%. This informal procedure has worked well at Elk.

Here Are Carding Settings, Speeds, and Standards

With 76 Whitin and Saco-Lowell 40-in. cards, two men tend 36 cards each. Since the cards are on the first floor, there is no vibration problem. Settings: doffers, 7; lickerin, 7; flats, 10; other settings according to waste standards. Waste standards: flat strips, 3%; fly 1½%.

Production is 8 lbs. per hr. with a cylinder speed of 165 rpm., doffer speed of 6½ rpm., and lickerin speed of 460 rpm. A 53-gr. sliver is made, with about 9 lbs. going into 12-in. cans. The cards run a little over an hour between doffs.

Cylinders are stripped twice a week, doffers every day. Three cards are ground every day; so each card is ground about every 20 days. General repair work is done by two men in the shop. Cylinders and doffers are clothed by the carders; flats and lickerins are sent out.

All cards are equipped with continuous strippers. Elk doesn't try to keep the wire sharp to the touch, because the strippers keep the cylinder dull. However, the people at Elk think that it is not necessary to keep the cylinders sharp to get good carding. The continuous strippers are run at 1,800 rpm.

In its drawing section, Elk has 48 deliveries with high five-roll drafting. A smooth-surface top-roll covering is used, because it takes a slick roll to run with Dan River clearers. It has been found that standard settings are best, and drawing variation is checked regularly and kept within narrow limits. Hank roving is 2.40.

Sixteen ends go onto the sliver lapper. The lapper used to be creeled all at one time, but now creeling is done at random as the supply runs out. This change reduced reworkable waste.

Elk Has 86 Spinning Frames With Double-Apron Drafting

Elk has 86 spinning frames equipped with double-apron drafting systems. The twin-apron system produces a smooth and strong yarn. Pneumafil has been on the frames for over two years. Spindle speed is 10,250 rpm., with 2-in. rings, 9-in. traverse, and 4.30 TM; 10-in. paper tubes are used.

Revolving top clearers are installed on all three lines of rolls, and a stripping machine is used to clean these rolls. Front rolls are picked twice a

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Dilute a little CINDET in HARD or SOFT water . . . apply with clean mop . . . let suds stand 5 or 10 minutes . . . scrub only if necessary, and rinse thoroughly. The result: AMAZINGLY BRIGHT, CLEAN FLOORING.

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week by hands who do nothing but pick rolls. The picking is followed by oiling so that the rolls are oiled right after they're picked. The underclearers are cleaned about every two weeks, with each spinner cleaning so many per day.

A Parks-Cramer cleaner helps keep the frames and overhead clean. A Bahnson evaporating system maintains a humidity of 55% in the card room and spinning room and 65% in the twister room. The mill is lighted with rows of continuous fluorescent tubes.

Winding equipment consists of 11,960 spindles; the single yarn is wound on a Barber-Colman spooler, and Roto-Coners wind the two-ply.

About 15% of the output at Elk goes out on ball warps. The mill is equipped with two Cocker warpers, which can make ball, snaked, or chained warps.

Elk has 170 employees with nine second hands and six shift bosses—one shift boss in each room on each shift. The morning shift boss doubles as overseer.

Useful Accessories For Textile Mills

▶ **To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.**

All-Purpose Tubing

Ace-Flex, an all-purpose transparent plastic tubing with unusual flexibility, has been announced by American Hard Rubber Co., 93 Worth St., New York 13, N. Y. The tubing is inert, odorless, and nontoxic, and it ages well. It is resistant to most inorganic acids and alkalis and many organic chemicals. Standard sizes are 0.120- to 1-in. I.D. Samples are available on request. (U-1)

Standard-Unit Alarm Circuits

An annunciator circuit with relay plug-in standard component parts has been developed by Tigerman Engineering Co., 4332 N. Western Ave., Chicago 18, Ill. Various types of visible-alarm indicators can be housed together. (U-2)

Water Filters

Marvel Engineering Co., 650 W. Jackson Blvd., Chicago, Ill., maker of synclinal filters, has recently adapted all models of its sump and line filters for water applications. No changes have been made in the basic synclinal design. Mesh sizes are from 30 to 200. Capacities: 5 to 100 gals. per min. (U-3)

Packaged Air Conditioners

GE's 1954 packaged air conditioners for offices and factories feature a completely sealed cooling system, which incorporates a hermetic condensing unit. Component parts of the hermetic condensing unit, including the compressor, motor, and condenser, are sealed in steel and lubricated for life. Manufacturer: General Electric Co., 5 Lawrence St., Bloomfield, N. J. (U-4)

Universal Coupling

A new type of universal coupling, operating on the ball-and-socket principle, is available for all types of machinery requiring coupled shafts, at an angle or straight line. Power-transmission stress is absorbed by two oversize keys. Bearing surfaces are heat treated and machined to close tolerances, and an oil reservoir is in the base. Manufacturer: B. M. Root Co., York, Pa. (U-5)

Static-Pressure Controls

Improved sensitive static-pressure controls have been introduced by The Henry G. Dietz Co., 12-16 Astoria Blvd., Long Island City 2, N. Y. The improved units have molded screw type terminals and silicone-impregnated glass-cloth diaphragms are available instead of neoprene. The controls operate from 0.3- to 20-in. water pressure in air conditioning, heating, and processing. (U-6)

Cold Galvanizing Process

A new method of cold galvanizing for surface protection of steel and iron has been announced by the Galvicon Corp., 40 W. 29th St., New York 1, N. Y. The new coating is useful wherever rust occurs on machines, equipment, or outside installations. It may be applied with a paint brush, electric spray gun, or by cold dip. (U-7)

Valves for Hydraulic Systems

Electrohydraulic servo valves with a high response speed and accuracy have been developed by the Moog Valve Co., Inc., Proner Airport, East Aurora, N. Y. The valves consist of a group of proportional-type four-way valves with no mechanical linkage. Maximum: 0.5 to 8.0 gals. per min. in hydraulic systems from 1,000 to 3,000 psi. (U-8)

Emergency Light Supply

What happens when the lights go out? An emergency unit made by Electric Cord Co., 195 Williams St., New York 38, N. Y., cuts on automatically when a power source fails. It plugs into any 110-v. a.c. outlet, and changing is automatically regulated. One application is to have one unit with five heads covering five stairwells. Standard unit with battery and two searchlights: $95.00; extra heads: $10.00 each. (U-9)

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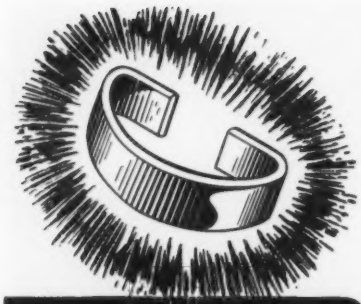

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Stiffening Agents and How They Work

CONTINUED FROM PAGE 88

Solvent-Soluble Thermoplastic Polymers

This class includes the acrylics, polyvinyl acetate and chloride, polyvinylidene chloride, styrene-butadiene copolymer, and thermoplastic resins in general.

Such materials may be applied from solvent solution, as is done in certain specialty applications. Because of the expense and inconvenience of a solvent treatment, the most practical method of handling them is from emulsion (or, more accurately, aqueous dispersion). The chemical manufacturer emulsifies the monomeric ingredients and polymerizes them to form a finely divided suspension of solid-in-liquid. Such materials are analogous in form to natural-rubber latex, which is in fact a member of the class.

Thermoplastic Films Vary in Hand

While all water-soluble polymers dry down to stiff films and impart a crisp finish, the thermoplastic emulsions encompass a wide variety of polymer types and yield films ranging from very soft to very stiff. A few types, in fact, are so hard and infusible that under the usual conditions of application the tiny dispersed particles will not flow together but form a powdery, discontinuous film.

Accordingly, there can result a wide range of hand modifications, for example:

Film form	Fabric Finish
Soft, tacky	Very soft hand
Soft, rubbery	Soft, full-bodied
Stiff, flexible	Leathery hand
Stiff, brittle	Firm hand
Discontinuous, powdery	Soft hand; may be delustered

The magnitude of the difference between polymer types is shown in the accompanying graph (Fig. 5), on which a soft polymer (100% ethyl acrylate), a hard polymer (50-50 ethyl acrylate-methyl methacrylate), and a discontinuance polymer (100% methyl methacrylate) are compared.

Only the hard polymer gives appreciable stiffness, as measured by the flexing test. The phenomenon can be explained in this way: The MMA polymer, because it did not form a continuous film, could not bind the fibers and yarns together and therefore could not stiffen the fabric. The failure of the soft EA polymer to stiffen is due to the rapid yielding or creeping of the bonds under stress; the bonds do not break but deform to such an extent that the fabric has little resistance to bending.

All thermoplastic polymers show a tendency to creep, and this characteristic is responsible for the lack of springiness (or liveliness) in fabrics finished with thermoplastics alone.

It should be emphasized that this relation between film properties and effect on fabric stiffness is a general one. Soft polymers, regardless of whether they are composed of styrene-butadiene, ethyl acrylate, or plasticized vinyl acetate, give a soft hand. Harder polymers impart increasingly firmer hands up to the point where they become discontinuous.

Soft polymers result from inclusion of substantial proportions of butadiene or acrylic esters; hard polymers from vinyl acetate or chloride, vinylidene chloride, or certain methacrylates; and discontinuance of polymers from styrene, methyl methacrylate, or acrylonitrile. Soft polymers may also be obtained by adding a plasticizer to a harder polymer.

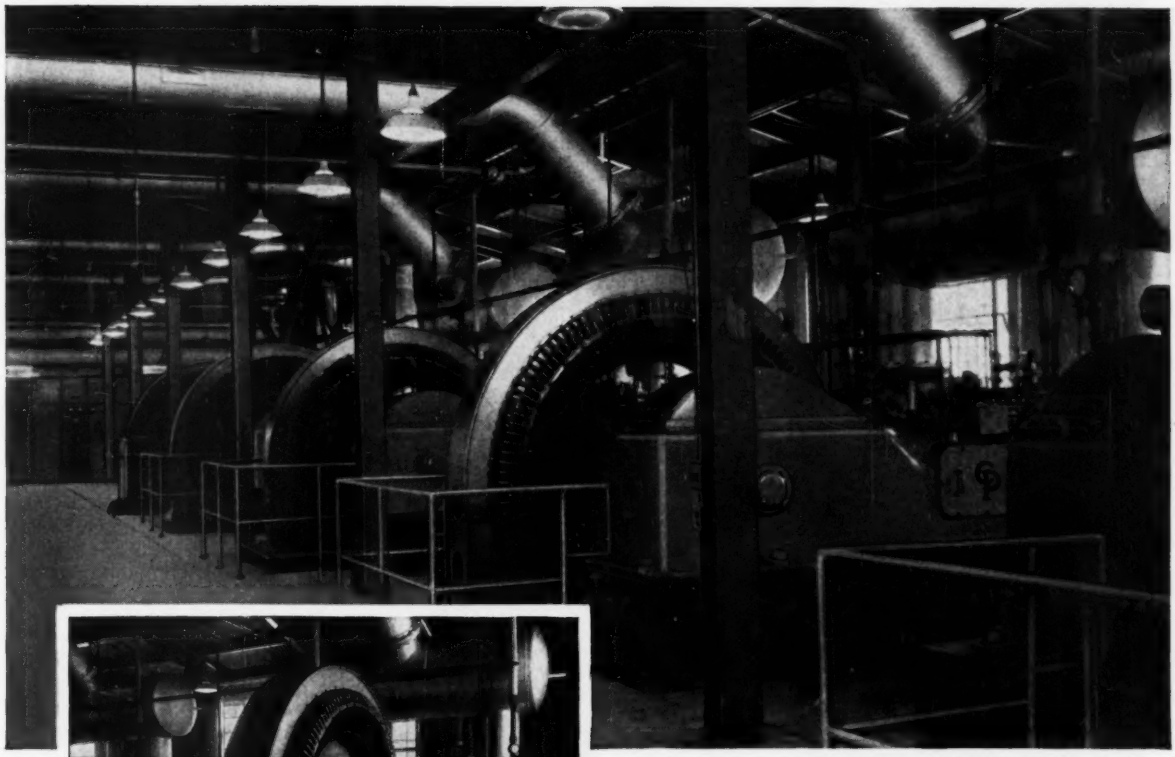
It should not be inferred, however, that polymers of equal hardness will always give identical effects on fabric. As was mentioned earlier, a polymer must adhere to the fibers to bind them together; and of two polymers having equal cohesion but unequal adhesion, the one with the greater adhesion will give the greater stiffening.

Other factors beside polymer hardness that can modify the effect on fabric include: particle size of the emulsion, composition, and concentration of emulsifying agent or protective colloid. The influence of these factors is generally small, however, compared to the major differences resulting from the physical nature of the polymer itself.

Cures Are Not Needed

The thermoplastics, in most instances, require no cure. Since they are completely polymerized at time of manufacture and since they contain no water-solubilizing groups, a simple padding and drying operation will give a washfast finish. In the case of the harder emulsion polymers, however, it is preferable that the fabric temperature reach 300° F. for a few seconds during drying so that the tiny emulsion particles can fuse together; otherwise, the maximum stiffness will not be attained.

As to washfastness, a distinction must be made between retention of the resin (which is almost always high)



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4. **ALLEN PROGRESSIVE PRESSUR-FORMING,** producing contoured uncut fiber flow, from head to point. A process originated and perfected by Allen.

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and retention of the stiff finish (which may be considerably reduced in a tumble wash). The reason for the latter effect is that: the mechanical action, under hot, wet conditions, lowers the adhesion between the polymer and the fiber so that the fibers are no longer as completely bonded; thus, the stiffness is lowered even though most of the resin (generally over 90%) is still present.

Hot pressing, particularly in the presence of moisture, is helpful in re-establishing the adhesion and restoring much of the original stiffness.

Certain of the thermoplastics can be given additional washfastness by reaction with thermosetting resins. For example, polyvinyl acetate—one of the most widely used thermoplastics—is available in various degrees of saponification. The resulting products combine the properties of polyvinyl acetate and polyvinyl alcohol. At 5 to 10% saponification, the product is still water insoluble and is available as a somewhat viscous emulsion or dispersion having typical thermoplastic properties. Like the water-soluble hydroxy-compounds, however, such a material can be more firmly fixed to the fabric by reaction with formaldehyde resins. At the other end of the scale, the 80 to 100% saponified materials are completely water soluble and have little or no residual thermoplastic properties.

Thermosetting Resins

The most common thermosetting resins in textile use are the ureaformaldehyde and melamine-formaldehyde condensates. These resins are commercially available in many forms, but for present purposes we will consider them as either monomeric or partly polymerized.

Urea condenses with formaldehyde to form mono-methylolurea, dimethylolurea, and similar low-molecular-weight monomers. Under more drastic conditions, linear polymers are produced. Both types are commercially available, the monomer generally as a 50 to 60% paste, though more recently as a dilute (25 to 30%) water solution, and the linear polymer as a more or less fluid syrup. The common types are all soluble in water.

Applied to fabric and cured, generally with an acid catalyst, either type will further condense to form a three-dimensional thermoset polymer.

Effects May Be Varied

The effect produced on fabric will depend primarily on the location of the resin:

1. The linear polymers, if sufficiently condensed, cannot penetrate into the fiber, not even into cotton and rayon. When cured, they bind the fibers and yarns together with a hard, brittle polymer and impart a crisp-hand effect. Because the thermoset polymer is insoluble and infusible, the finish is usually quite washfast; but if broken mechanically, it cannot reseal the way a thermoplastic finish does.

2. Monomeric types, which can penetrate more or less completely into rayon and cotton fibers, do not appreciably stiffen the fabric, although they may add a certain amount of bulk and weight. But if these same materials are applied to nylon or other hydrophobic fibers they cannot penetrate, they are forced to polymerize on the surface. The type of finish will then depend on the same two factors discussed earlier: cohesion and adhesion. Adhesion is particularly important, since thermoset polymers cannot be resealed by hot pressing once the adhesion is destroyed.

Fiber Types Affect Properties

The complexity of the situation is best illustrated by the data below, which show the stiffness before and after washing of fabrics treated with several commercially available urea-formaldehyde derivatives.

Stiffness of Fabrics Treated With Various Thermosetting Resins

Resin	Molecular size	Rayon		Nylon	
		Original stiffness	Wash-fastness	Original stiffness	Wash-fastness
Rhonite 610	Monomer	Low	—	Moderate	Poor
Rhonite R-2	Monomer	Low	—	Very high	Excellent
Rhonite 414	Part polymer	High	Good	High	Good
Rhonite 313	Part polymer	High	Good	Very high	Excellent

It is apparent that on rayon the monomeric materials (misnamed resins, since they become resins only after they are polymerized) penetrate inside and hence do not stiffen. The part polymers go largely on the surface of the fibers and bind them together with a washfast film of thermoset polymer.

On nylon, however, the monomeric materials are forced to remain on the surface of the fibers, where they ex-

hibit a varied behavior. Rhonite 610, which does not form a good surface polymer, is very inadequate as a stiffening agent; but Rhonite R-2 is equally at home either inside or outside the fiber, since it can form a surface film having satisfactory cohesive and adhesive properties. Regarding the polymerics, the superiority of Rhonite 313 over Rhonite 414 on nylon is probably due to better adhesion, since both are quite effective on rayon.

Fiber type can pose further problems. On Orlon and Dacron, for example, washfast adhesion is difficult to achieve. Acetate, on the other hand, can be successfully stiffened by a number of materials.

Melamine resins, like the ureas, are available in a variety of modifications yielding a similar range of effects. In most cases, however, a given melamine resin will show rather close resemblance to the corresponding urea type.

Other resin types, of somewhat lesser technological importance, are the ketone - aldehydes, phenol - aldehydes, and alkyd resins. The latter, which bear little relation to the aldehyde-containing resins, are sometimes used to impart crisp, lustrous finishes to acetate satin ribbons; other varieties impart fullness or bulkiness. Some of the alkyds have limited thermosetting tendencies and are more properly classed with the solvent-soluble resins.

Textile Calendar

Southern Safety Conference, Louisville, Ky., March 7 to 9.

Philadelphia Regional Safety and Fire Conference, Philadelphia, Pa., March 10 and 11.

Corrosion Engineers Conference and Exhibition, Kansas City, Mo., March 15 to 19.

Institute on Industrial Relations, National Association of Manufacturers, Hollywood Beach Hotel, Hollywood, Fla., March 15 to 19.

Central Indiana Safety Conference, Indianapolis, Ind., March 17 and 18.

American Society For Testing Materials, Committee D-13, Statler Hotel, New York, N. Y., March 17 to 19.

Southern Municipal and Industrial Waste Conference, N. C. State College, Raleigh, N. C., March 18 and 19.

Alabama Cotton Manufacturers Assn., annual convention, Hotel Buena Vista, Biloxi, Miss., March 18 to 20.

Texas Safety Conference, Dallas, Texas, March 29 and 30.

Western Pennsylvania Safety Conference, Pittsburgh, Pa., March 30 and April 1.

International Trade Exposition, textile machinery included, Utrecht, Holland, March 30 to April 8.

ASQC, Carolinas Section, spring meeting, Clemson College, Clemson, S. C., April 2.

Delta Kappa Phi Fraternity, national convention, N. C. State School of Textiles, Raleigh, N. C., April 2 and 3.

National Packaging Exposition, sponsored by American Management Assn., Convention Hall, Atlantic City, N. J., April 5 to 8.

Greater New York Safety Conference, New York, N. Y., April 6 to 9.

CMA of Georgia, annual convention, Boca Raton Hotel Club, Boca Raton, Fla., April 7, 8, and 9.

West Virginia Safety Conference, Charleston, W. Va., April 14 to 16.

LTI Alumni Meeting, Haddon Hall, Atlantic City, N. J., April 28.

Michigan Safety Conference, Detroit, Mich., April 20 to 22.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., April 23.

AMA, manufacturing conference, Hotel Statler, Cleveland, Ohio, April 26 to 28.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, April 26 to 30.

Industrial Health Conference, Hotel Sherman, Chicago, Ill., April 26 to 30.

National Assn. of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

Hosiery Industry Conference, annual conference, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

British Industries Fair, industrial section, Castle Bromwich, Birmingham, England, May 3 to 14.

North Carolina Safety Conference, Raleigh, N. C., May 4 to 6.

The Fiber Society, spring meeting, Institute of Textile Technology, Charlottesville, Va., May 5 and 6.

American Society of Training Directors, annual conference, Schroeder Hotel, Milwaukee, Wis., May 5 to 7.

Welding and Allied Industry Exposition, Memorial Auditorium, Buffalo, N. Y., May 5 to 7.

TOE of Georgia, A. French Textile School, Georgia Tech, Atlanta, Ga., May 8.

Swiss Industries Fair, Textile Machinery exposition, Basel, Switzerland, May 8 to 18.

Western Safety Conference, Spokane, Wash., May 16 to 19.

Basic Materials Exposition, International Amphitheatre, Chicago, Ill., May 17 to 20.

NACM, 100th anniversary, Somerset Hotel, Boston, Mass., May 19 and 20.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 21.

SCTMA, annual convention, The Cloister, Sea Island, Ga., May 27 to 29.

International Congress of Man-Made Textiles, Paris, France, May 31 to June 3.

Canadian International Trade Fair, Toronto, Ont., Canada, May 31 to June 11.

Society of the Plastics Industry, Public Auditorium, Cleveland, Ohio, June 7 to 10.

STA, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 10 to 12.

Philadelphia Textile Institute, annual alumni reunion, Manufacturers Golf and Country Club, Oreland, Pa., June 11.

World Congress on Surface-Active Agents, Sorbonne, Paris, France, Aug. 30 to Sept. 3.

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 9 to 12.

The Fiber Society, fall meeting, in conjunction with Textile Technical Federation of Canada and Canadian Assn. of Textile Colorists, McGill University, Montreal, Canada, Sept. 13 and 14.

AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18.

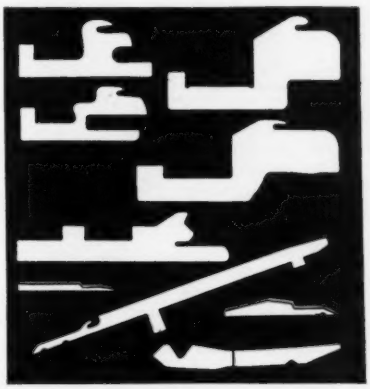
Industrial Packaging and Materials Handling Exposition, Competition, and Short Course, Chicago Coliseum, Chicago, Ill., Sept. 27 to 30 (course), Sept. 28 to 30 (exposition).

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

TOE of Georgia, A. French Textile School, Georgia Tech, Atlanta, Ga., Oct. 23.

WANT TO KNIT FINER FABRICS AT LESS COST?



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IVES SINKERS AND SLIDERS

Ives products also include all shapes and gauges of Jacks and Transfer Points or Quills for circular hosiery machines and all gauges of Guides, Sinkers and Sley Points for Tricot and Raschel machines.

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Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way.
Clear, easily read figures; all-metal, self-inking; will cut costs and prevent mistakes in preparing price tickets and labels. Numbers changed with touch of finger.
Send for descriptive folder illustrating many printing and numbering machines specially designed for the textile industry.

Employees' Record and Time Card Marking Machine

SPEED SET Machines can be obtained for numbering uses of all kinds, in addition to numbering tickets, labels and tags. The above machine illustrates just one variety. Machines can be equipped with many features adapted to customers' needs, such as bases, gauges, counters, etc., and mounted on special platforms.

• WRITE TODAY FOR FOLDERS describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing plants.

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Atlantic and Shepherd Aves.
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News OF THE MONTH

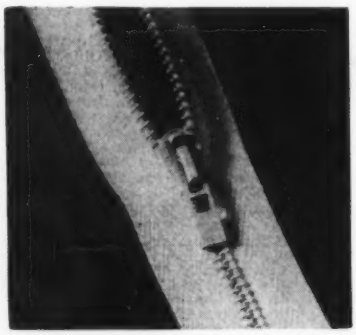
1953 HOSIERY SALES

Final reports on the hosiery industry for 1953 indicate that the industry is maintaining sales at a near record pace. In most categories, last year's shipments reached within 3.4% of the total for 1952, which set all-time high marks. A considerable portion of the decline represented losses in the export field, where trade restrictions have become more severe.

FIBER CONSUMPTION IN 1975

The textile industry will be at least 70% larger in 1975, according to a study by Willard C. Wheeler, marketing consultant for Anderson & Cairns, Inc. Fiber consumption should rise from the 6½-billion-pound base in 1952 to at least 11-billion pounds. Percent increases over the 1952 level:

Cotton, 23%; rayon and acetate, 80%; newer synthetics, 650%. Cotton will still be way ahead in total consumption.



JAMMED ZIPPER EASILY RELEASED

NEW ZIPPER made by Talon, Inc., 461 Eighth Ave., New York City, has an improvement that makes it possible to remove jammed clothing by pressing the pull lever backwards. The pull lever presses against the Magic Tab, which slightly raises the zipper off its track.

METALLIC STAPLE

Staple metallic yarn for blending with other fibers in a spun yarn has been introduced by Metlon Corp., 432 Fourth Ave., New York 16, N. Y. Sixteen colors are planned. Yarn with 4 to 8% metallic staple has been spun on the cotton and worsted system.

MULTICOLOR LUREX

Development of a multicolored metallic yarn has been announced by Lurex Div., The Dobeckmun Co., Cleveland, Ohio. Color possibilities are said to be limitless. The yarn is offered in 1/64-in. width, and it sells for about $3.75 per lb. (approximately 10,500 yds. of yarn).

OVERDRIED COTTON

At a recent meeting of ginners and spinners under sponsorship of the National Cotton Council, Joe Delaney of Joanna Cotton Mills reported that cotton that had been experimentally overheated increased ends down in spinning and weaving. More research is said to be needed to provide spinners and ginners with technique and instruments to detect overdried cotton.

TEXTILES, PLUS RADAR

Textron, Inc., is now in the electronics business. The textile company has purchased the entire stock of Dalmo Victor Co., San Carlos, Calif., a company that produces radar equipment.

MAID OF COTTON

In case you haven't heard, Beverly Pack of El Paso, Texas, is the 1954 Maid of Cotton. She is dark-haired, blue-eyed, and 20 years old. The first alternate is Hope White, who has green eyes.

THREE MILL DEVELOPMENTS

► Double-shuttle looms are in operation at Collins & Aikman's Downington, Pa., plant, turning out carpets made of 15-den. nylon. The carpet will retail at $13.00 a square yard.

► Sheer marquisette curtains made of Fiberglas are being produced by Hess, Goldsmith & Co., Inc. One piece of yarn is used per pick.

► A shrinkproofing process for knitted cotton fabrics has been developed by Alamac Knitting Mills, Indian Orchard, Mass. The process costs 7 to 8¢ per yard.

in the Classified List of TEXTILE WORLD'S Buyers' Guide and Reference Data Issue

EVERYTHING from Adhesives to Zinc is included in the Classified List of your BUYERS' GUIDE AND REFERENCE DATA ISSUE sent to you in Mid-November as part of your subscription.

Over 1600 companies supplying machinery, equipment, chemicals, dyestuffs, and other supplies as well as those offering services—factoring, engineering, commission work, etc.—are included under one or more of the 2142 headings which are cross-referenced for your time-saving convenience. Nowhere, in the industry, will you find a similar source of buying information compiled with such painstaking care.

The Classified List is only one of many features, designed to help you in your daily work, to be found in your BUYERS' GUIDE AND REFERENCE ISSUE. The Reference Data Section, for example, contains over 73 pages of useful production and reference information on Cotton, Wool, Synthetics, Knitting, Bleaching, Dyeing, Finishing, and General Mill Engineering.

Whatever your buying or reference needs may be, get the habit of consulting your BUYERS' GUIDE AND REFERENCE DATA ISSUE . . . make it a part of your daily mill-life.

It's YOUR BOOK -designed to supply the answers to YOUR PROBLEMS!

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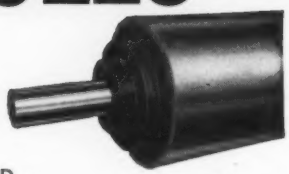
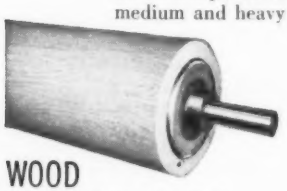
SHAF-TITE®

TEXTILE ROLLS

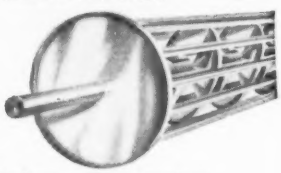


RUBBER Neoprene, natural rubber, Hycar rolls. Light and medium-duty carrier rolls and heavy-duty squeeze rolls.

METAL Steel, brass, aluminum, stainless steel and chromium-plated for light, medium and heavy duty.



WOOD
For all makes of textile washers and mangles: Self-Seal*, White Seal*, Anchor Seal* solid rock maple rolls. For fulling mills: wood lag rolls and wood lags. General purpose: Shaf-Tite, solid wood or kiln-dried wood carrier rolls.
*Trademark



REELS
Patented girder-type construction; stainless steel reels up to 20 feet in length for any make of machine. Round, hump, triangle, and oval.

FREE! Send for 64-page catalog. Permanent reference work for all rolls. Includes inquiry dimension sheets, care of wood and rubber rolls, and engineering data. RODNEY HUNT MACHINE CO., 54 Maple St., Orange, Mass., U.S.A.

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INDUSTRIAL ROLL DIVISION
Manufacturing Engineers Since 1840

NEWS *of the Month* ..... (Continued)

AMERICAN PAPERS AT PARIS

American papers presented at the International Congress of Man-Made Fibers, Paris, France, May 31 to June 3, will include "Fabrics from the Newer Synthetic Fibers," Dr. Lloyd L. Leach, Research Div. of Du Pont; "Dyeing of Orlon Acrylic Fiber and Dacron Polyester Fiber and Blends with Other Fibers," Dr. Paul L. Maunier and Joseph F. Laucius, Organic Chemicals Dept. of Du Pont; "Military Applications of Synthetic Fibers," Dr. Stephen J. Kennedy, Quartermaster Corps; "American Developments in Rayon and Acetate Fabrics," Julius B. Goldberg, a consultant; and "Recent Textile Machinery Developments and Trends Relating to Man-Made Fibers," Dame S. Hamby, School of Textiles, N. C. State College.

DAME S. HAMBY, professor at the School of Textiles, N. C. State College, and TW author, [Feb., p. 110] will present a paper at the International Congress of Man-Made Fibers.

USDA CLASSIFICATION SERVICE

The U. S. Dept. of Agriculture has changed its procedure for issuing Form A's (grade and staple length) on cotton samples. Now a Form A will be issued only on freshly drawn samples submitted directly to a Board of Cotton Examiners by the owner of the cotton or his agent.

TRAIN TO ACMI MEETING

A special train to the meeting of the American Cotton Manufacturers Institute in New Orleans (April 22 to 24) will leave Charlotte, N. C., at 2:00 p.m., April 21. Stops will be made at Spartanburg, Greenville, Atlanta, and Montgomery. About 1,000 people are expected at the meeting.

ADVANCES IN FELLMONGERING

In the Wool Textile Research Laboratories of the Australian Commonwealth Scientific and Industrial Research Organization, some interesting fellmongering investigations have led to an improvement in methods of production. The laboratories now advise that if the aeration is adequate, a further improvement is the addition of 0.05% of calcium chloride to the digest liquor. In the processing of pieces from painted skins that have been delimed with acid, an immersion of about 8 hrs. in a proteolytic enzyme solution immediately after shrinkage hastens the warm-water digestion.

POLYESTER FILM

Du Pont's new Mylar polyester film can be used as a base for metallic yarn, a supporting yarn, a surfacing material for metallizing and fabric laminations, a leader material for dyeing and finishing operations, and for other textile applications. It will not dry out or become embrittled with age. Although Mylar polyester film is chemically similar to Dacron polyester fiber, it is not a fiber itself; Mylar is made in a continuous sheet.

N. E. TEXTILES DEFENDED

"The understanding and cooperation of all citizens and especially educational leaders is needed to help keep the textile industry in New England . . . Textile mills . . . provide more jobs and jobs at above-average wages than any other New England industry . . . Textile jobs may be replaced, but never have they been replaced by jobs as good or as high-paying."

These words were spoken by Frank Maria, director of industrial relations, Merrimack Mfg. Co., Lowell, Mass., in reply to a charge by James E. Kelley of Boston University that New England benefits from the closing of textile mills because needed industrial space is released.

FABRIC-DESIGN AWARDS

Annual prizes for new ideas in fabric construction will be given to textile-school students by Celanese Corp. of America. Eight schools will participate. Designs will have to contain mostly Celanese yarns, but any commercially available yarns can be used.

The Newest Link in SOLVAY'S nation-wide chain of Great Production Centers

To Better Serve You with an additional source of supply, SOLVAY announces the start-up of its chlorine-caustic soda operations at the new Perkins Plant at Moundsville, W. Va.

Equipped with the Most Advanced Facilities in the industry—this new plant represents the last word in modern manufacturing equipment and efficient production methods. Very shortly this plant will also be producing Methyl Chloride, Chloroform, Methylene Chloride and Carbon Tetrachloride.

The Addition of this New Producing Center to the four points from which SOLVAY has been shipping carload quantities places SOLVAY in an even better position to give you quicker, more efficient deliveries.

Whatever Your Requirements—SOLVAY is ready to help you with problems involving the processing, handling or storage of SOLVAY products . . . assist you in the development of a new or improved process.

Your Needs and Problems are handled by SOLVAY's trained and experienced *local* field representatives operating out of SOLVAY's 13 branch offices. And whether you're a small or large manufacturer—you're always sure of receiving the close, personal attention that best fits your *individual* needs!

For Dependable Quality . . . Plus the Extra Services that help you meet today's keen competition—make your first call—SOLVAY!

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Soda Ash • Snowflake® Crystals • Potassium Carbonate
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Cleaning Compounds • Caustic Potash • Sodium Nitrite • Ammonium Chloride
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RUGGED, RELIABLE
VARIABLE-SPEED CONTROL

CONSIDER THE IMPORTANCE OF LEWELLEN LEVER & LINK SUSPENSION. This distinctive feature distributes equally the thrust bearing load on every ball in the bearing, at all speeds and positions, and while changing speeds. Thrust bearings are mounted at outer end of disc hub. When lever moves, discs move positively; belt is not required to force discs apart. Here's smooth operation!

THEN, NOTE PARTICULARLY — the Lewellen DOUBLE-BLOCK, UNI-TIP BELT keeps tension at a minimum on belt, bearings, and shafts. UNBREAKABLE BELT SPLICE — an outstanding feature for uninterrupted operation. SIMPLE, POSITIVE LUBRICATION SYSTEM for disc hubs, keys, and shaft.

if it's variable-speed control . . . look to

LEWELLEN

TRANSMISSIONS • MOTOR PULLEYS

Open or enclosed, vertical or horizontal Variable-Speed Transmissions in all sizes from fractional h.p. to 60 h.p. . . . Variable-Speed Motor Pulleys in all ratings from fractional to 7½ h.p. Speed range, 3 to 1 for all pulley sizes. (One size—2¾ to 1.)

Service in variable-speed control exclusively for more than 50 years. May we help you?

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA

NEWS *of the Month* (Continued)

UNION TRYING TO HOLD LINE

On woolen and worsted union contracts that expire on March 15, the Textile Workers Union of America (CIO) will ask for renewal of present contracts with no change in terms.

WOOL PROMOTION

Wool, Inc., has been organized by the Boston and Philadelphia wool trades and the Wool Bureau of New York. It will administer funds collected equally from each of the groups for wool promotion directed chiefly toward the ultimate consumer. Some $350,000 annually will be spent during the next three years.

ALABAMA SAFETY CONTEST

Winners of the 1953 safety contest sponsored by Alabama Cotton Manufacturers Association have been announced:

	Frequency rate
Weaving and Spinning Div.	
First—Goodyear Decatur Mills	0.00
Second—Lakeside Mills	0.00
Third—Tallassee Mills	0.47
Spinning Div.	
First—Gurney Mfg. Co.	0.00
Second—Adelaide Mills	4.57
Third—Linen Thread Co.	5.01

QUALITY-CONTROL SPOT CHECKS

C. H. Masland and Sons, maker of floor covering, has signed an agreement with U. S. Testing Co. to have its products spot checked with laboratory tests. Test fabrics will be bought randomly at retail, and mill processes will also be checked.

TEXTILE TECHNOLOGISTS WANTED

The U. S. Civil Service has announced an examination for Textile Technologists for the new Quartermaster Research and Development Command at Natick, Mass. Two categories are covered: research and development of improved knitted and woven goods from a knowledge of fiber properties, and research and development work in textile finishing. This work involves the "application of scientific principles." The pay ranges from $4,205 to $9,600. Application forms are available from the Natick command.

TRAINING FILMS AVAILABLE

A new three-film set on training foremen in human relations is available from National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill. The films run 12 mins. each and are available in 16-mm. sound movies and 35-mm. sound slidefilms. Prices available from NSC on request.

MILLS DUCKING RESPONSIBILITY?

A resolution condemning the practice of including gray-goods contract clauses that disavow mill responsibility for the weaving of first-quality goods was recently passed by The Textile Distributors Institute. The organization also points out a similar trend in contracts for spun-viscose and spun-acetate fabrics. Standards are needed on fabrics made of all yarns to minimize the possibility of weaving mills hiding behind a "no-guarantee" policy on the part of some yarn producers.

EXPERIMENTAL BALE COVERS

Many experimental cotton-bale covers are being tested in the search for an improved bale cover. These experimental covers are made of cotton duck, cardboard, and paper; the methods of closing include zippers, rope lacing, and snaplinks. The covers fit on the outside of bale ties to allow sampling without cutting the cover.

Packaging and Handling Show

CONTINUED FROM PAGE 97

The marker can be used on any surface and gives printing-press legibility. The marking area is 2x6 ins. or 2x9 ins., and two colors can be printed at the same time.

Permanent dies can be made to specifications, or the unit can be furnished with grooves to take interchangeable type from a kit.

Textile uses: in the shipping room, maybe one printer or one die for each customer to save time. Initial cost is $25 with one die.

Pressure-Sensitive Tapes

Five pressure-sensitive tapes with textile-mill uses were shown by Industrial tape Div., The Seamless Rubber Co., New Haven 3, Conn. Type 660 is a crepe-paper-backed tape for warps; Type 664 is similar but with a flat back; Type 662 is an electrical tape for the plant engineer; Type 668 is Fiberglas reinforced for cartons; and Type 626 is a waterproof tape with a cotton-fabric backing.

"Only minutes ago we had a fire!"

"It's all over now, but we had quite a scare. The whole place might have burned down if this fire extinguisher hadn't been handy. Funny thing is I never thought *I'd* turn out to be a fireman."

Nobody ever thinks he'll have a fire. That's why it's so important to be prepared with a battery of Kidde Dry Chemical Extinguishers. Just pick up . . . point the horn . . . and pull the trigger of a Kidde Portable. Instantly, the threatened area is blanketed with a cloud of dry chemical. Surface fires in textiles are knocked down quickly. Fires in burning liquids are extinguished without splashing.

Remember . . . for extra speed, extra efficiency and safety, insist on Kidde Dry Chemical Portables.

Kidde

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Let SHAMROCKS help you

INCREASE TEXTILE PRODUCTION

Save time and money

No. 12 SHAMROCK DOFF BASKET

Photo shows No. 12 leather reinforced Doff Baskets in use at a large Southern textile mill. Baskets are loaded with yarn that is being dumped into spooler.

Every hour you save with Shamrocks means another hour of production! That's why sturdy Shamrock Baskets . . . preferred in textile plants everywhere . . . pay for themselves many times through their long service life. The No. 12 Shamrock Doff Basket is "built to take the knocks", from its leather-reinforced canvas body to its smooth hardwood runners. Let a Shamrock representative survey your plant and recommend the right Shamrock styles for your particular needs! Manufactured by MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 37 W. 43rd St., MU 2-1437; ATLANTA—W. E. Petway, 4403 Jefferson St., Chamblee, Ga., Phone 7-2430; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. Lockwood 6564; LOS ANGELES—Fred J. Petersen, 4645 East Olympic Blvd., ANgelus 0292; Export Manager—R. A. Auerbach, Easton, Pa. Cable Address: "Natly".

SHAMROCK

CANVAS BASKETS • HAMPERS • TRUCKS

NEWS ABOUT *Suppliers*

EQUIPMENT SUPPLIERS

The American MonoRail Co., Cleveland, Ohio, has appointed Meade O. Bradshaw to the staff of the Greenville, S. C., district office. J. W. Lamprecht, formerly with the Greenville office, has been transferred to the Cleveland, Ohio division office.

American Textile Machinery Association has reelected Frederic W. Howe, Jr., as its president. Mr. Howe is president of Crompton & Knowles Loom Works, Worcester, Mass. Other officers reelected are: W. Frank Lowell, Saco-Lowell Shops, Boston, vice president; James E. Hollis, Crompton & Knowles, secretary; Samuel F. Rockwell, Davis & Furber Machine Co., North Andover, Mass., treasurer.

Atlantic Steel Co., Atlanta, Ga., has appointed R. E. O'Neill general manager of sales. R. H. Prater has been named traffic manager for the company.

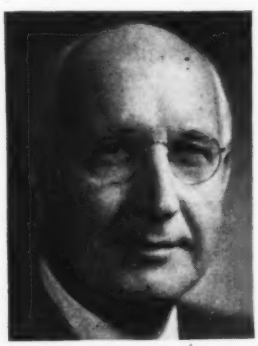
Babcock & Wilcox Co., New York, N. Y., has appointed E. T. Wilson, Jr., sales representative of the Tubular Products Div. for the Oregon, Washington, British Columbia, Alberta, and Saskatchewan area.

Beckman Instruments, Inc., South Pasadena, Calif.,—Five new field repair specialists have been assigned headquarters in the U. S. and Canada. Service headquarters are located at Los Angeles, Calif., Washington, D. C., Mountainside, N. J., Houston, Tex., and Toronto, Can.

Brosites Machine Co., Inc., New York, N. Y., has appointed Clarence E. Avery, Jr., assistant sales manager.

Container Corp. of America, Chicago, Ill., has made William P. Peters manager of the folding-carton plants at Portland, Ore., and Seattle, Wash. Mr. Peters will locate in Seattle. Eugene H. Thomas is sales manager of the company's Los Angeles shipping-container division. Walter L. Sweeney is assistant general manager of the Los Angeles shipping-container operations. Fred A. McFarland is general manager of the company's folding-carton operations in the San Francisco Bay area.

The Carborundum Co., Niagara Falls, N. Y., has elected W. J. Ulrich, senior sales representative in the Detroit area, a vice president of the company. Mr. Ulrich will continue his sales activities in the Detroit area.



JAMES BECKET (left) has been made executive vice president of Interchemical Corp. CHARLES W. SCOTT (right) succeeds him as president of the Finishes Div.

News About **SUPPLIERS** (Continued)

HOWARD M. PALMER has been made sales vice president of Lewis-Shepard Products, Inc.

Coleman Co., Inc., Greenville, S. C., has appointed Paul W. Moreland to manage the Greensboro, N. C., office. He succeeds E. R. White.

Continental-Diamond Fibre Co., Newark, Del., has appointed H. Rowell Conklin manager of the Milwaukee, Wis. office. He succeeds the late Walter R. Clarke.

Crescent Corp., Fall River, Mass., has appointed Willard F. Staples executive vice president. Mr. Staples returns to Crescent from the presidency of Merrimac Mfg. Co., a firm formerly owned by Crescent Corp.

W. D. Dodenhoff Co., Greenville, S. C. has appointed Lee C. Shook as sales representative for South Carolina and part of North Carolina. Mr. Shook will make his headquarters at the home office in Greenville.

Firestone Tire & Rubber Co., Akron, Ohio, has made Raymond C. Firestone and J. E. Trainer executive vice presidents of the company. All of the other officers were re-elected.

Flexible Steel Lacing Co., Chicago, Ill., has appointed Vertner S. Kenerson to represent the company in the Carolinas, Virginia, and east Tennessee.

Robert Gair Co., Inc., New York, N. Y., has appointed Floyd C. Costello assistant general production manager for container-division operations.

Howard Bros. Mfg. Co., Worcester, Mass., has named Harry C. Coley chairman of the board. Mr. Coley will continue as treasurer. Neal A. Mitchell has been named president to succeed Mr. Coley. He will continue as treasurer. Arnold W. Englund has been named general manager; Henry H. McWay, superintendent Percy F. Rowley, director of purchases, advertising, and supervisor of personnel. An addition has been made to its sales force in the Southern territory. Harold Suggs will be assistant to Bruce D. Hodges, Jr., who was made agent of the Gastonia, N. C., branch after the resignation of Carl M. Moore.

Milprint, Inc., Milwaukee, Wis., has appointed Jack J. Bodie to the national sales staff.

Minnesota Mining & Mfg. Co., St. Paul, Minn., has appointed Harold F. Larson as general office manager.

Orr & Sembower, Inc., Reading, Pa., has appointed Charles M. Setzer & Co., Charlotte, N. C., as sales and service representative in central North Carolina and in the northern part of South Carolina. C. M. Setzer, Jr., is in charge of the Charlotte headquarters and Rowe A. Mauney operates from Marion, N. C.

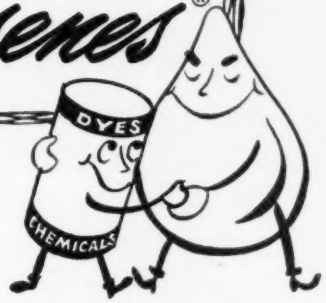
Precision Knitting Machine Co., Syracuse, N. Y., has been formed by two former members of Tompkins Brothers. The new firm, a division of Central City Machine & Tool Co., will manufacture spring-needle knitting machinery.

Proctor & Schwartz, Inc., Philadelphia, Pa., has named P. Kay Schwartz president. Mr. Schwartz succeeds Thomas W. Allen, retired. Myron T. Fleming has been named executive vice president and will continue to head the Dryer Div.

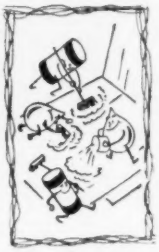
Pyrene Manufacturing Co., Newark, N. J. has made Arthur F. Ratzer vice president. Maynard A. Laswell, now vice-president of C-O-Two Fire Equipment Co., has been given additional duties as vice president of sales for Pyrene.

Rapids-Standard Co., Inc., Grand Rapids, Mich., has purchased an interest in The Keystone Conveyor Co., Detroit,

the Synergistic Versenes®



WHAT "SYNERGISTIC" MEANS

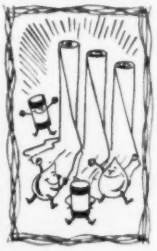


When one chemical cooperates with one or more other chemicals to make them all work better together than each could work separately, the action is called "synergistic". This explains why the synergistic Versenes are so valuable to textile processing. From cleaning and scouring processes right on through dyeing and finishing they furnish synergistic action that cuts costs, improves quality, enhances appearance.

THE PROFITABLE PARTNERSHIP

When one or more of the Versenes is properly added to your wet processing formulas it can insure cleaner fibers, softer hands, whiter bottoms and brighter colors. It can prevent or remove iron, lead and other metallic stains. It solubilizes "insolubles", increases color fastness, prevents shade changes, spotting, streaking and crocking — keeps dyeing on the level.

GUARANTEED QUALITY



The synergistic action of the powerful Versene Chelating Agents is your assurance of satisfaction. Made only under F. C. Bersworth patents and process, the Versenes are extremely stable at high temperatures throughout the pH range. Chelating power is guaranteed in sample or carload lots. Available as several formulas in liquid or powder form. Send for Technical Bulletin No. 2 and samples. On complicated problems ask for Chemical Counsel.

VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gal. Versenate Method. Complete with instructions $5.00 Postpaid.

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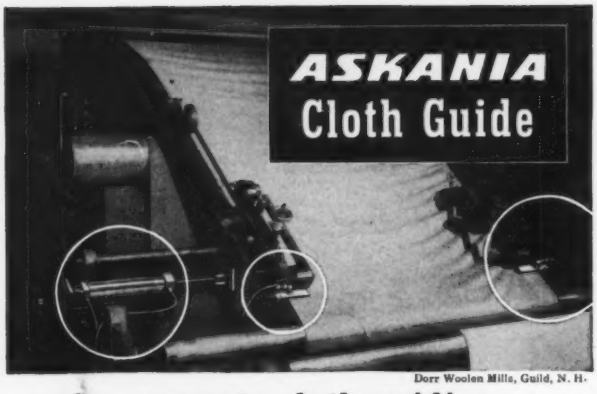
WAREHOUSE STOCKS

Chas. S. Tanner Co., Liberty Life Bldg., Charlotte, N. C.
Kraft Chemical Co., Inc., 917 West 18th Street, Chicago 8, Illinois
Siegel Chemical Co., One Hanson Place, Brooklyn 17, New York
George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, Rhode Island
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
Braun-Knecht-Heimann Co., San Francisco, California
Van Waters & Rogers, Inc., Seattle, Wash. & Portland, Ore.
Braun Corporation, Los Angeles, California



Dorr Woolen Mills, Guild, N. H.

for accurate cloth guiding at top tenter frame speeds

- **Works at highest speeds** . . as fast as you want the tenter frame to go.
- **100% pickup** . . keeps up with fast runouts . . works perfectly with over-feed.
- **For any cloth** . . heaviest woolens to lightest gauze . . pins or clips closer to selvage.
- **Non-Contact** . . only a breath of air touches the cloth . . lint-free . . cannot clog.
- **Easy to Install** . . pin or clip type tenter frames . . attached without extensive machine changes.
- **Easy to Maintain** . . your own men can keep it going . . no electronics.

For further details, ask for Bulletin 161

ASKANIA REGULATOR COMPANY
272 E. Ontario Street Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp

IF YOU HAVE WATER, DIRT OR SLUDGE IN YOUR AIR LINES Use the NEW "M-B"

AUTOMATIC AIR LINE FILTER
— Model W-1 —

Amazing performance is accomplished by using angular air inlets which develop a centrifugal action, abstracting the moisture and throwing it against the wall of the bowl, from where it runs to below the baffle plate, definitely capturing it to be drained. RIBBON TYPE FILTERING UNIT removes solids 10 microns (.00039") and larger. Bowl is transparent plastic, thus all foreign matter filtered from the air line is visible, eliminating guesswork as to when filtering element should be cleaned or bowl drained. No water, dirt or oil in compressed air that has passed through the filter. . . . This piece of equipment gives maximum protection to Scott and Williams Lint Blowers, Blow-off Hoses and various air-operated controls.

Representatives in All Textile Centers

M·B PRODUCTS
46 Victor Ave.
DETROIT 3, MICHIGAN

News About SUPPLIERS (Continued)

Mich. The name of the Detroit firm has been changed to Rapistan-Keystone, Inc. The management and sales organization of the company will remain unchanged except for the addition of Nathan C. Snyder as secretary and Eugene Hummel as treasurer of the company.

Robertshaw-Fulton Controls Co., Greensburg, Pa., has appointed Frank H. Post as sales manager in charge of all sales for the Thermostat Div. and the American Thermometer Div. E. J. Horton will assume new duties in the executive office at Greensburg.

Taylor Instrument Co., Rochester, N. Y., has established a new Taylor subsidiary in Australia. Known as Taylor Instrument Cos. of Australia Pty. Ltd., it will soon be offering a complete service including sales, repair, and manufacturing. W. E. Kirby, sales manager of Taylor's English subsidiary, Short & Mason Ltd., has been appointed managing director of the new company.

Textile Porcelains, Inc., New York, N. Y., has appointed Ben G. Friedman sales representative in the eastern and southern United States.

Thermomat Co., Inc., Trenton, N. J., has opened a new office at 7530 N. Sheridan Road, Chicago, Ill.

CHEMICAL & YARN SUPPLIERS

Adelphi Paint & Color Works, Inc., New York, N. Y., has purchased Baer Bros. Paint & Varnish Co., Inc., and will operate it as a division of Adelphi.

American Cyanamid Co., New York, N. Y., has appointed J. D. McPherson assistant manager of its Manufacturers Chemicals Dept. Mr. McPherson will continue to operate as technical director of the department.

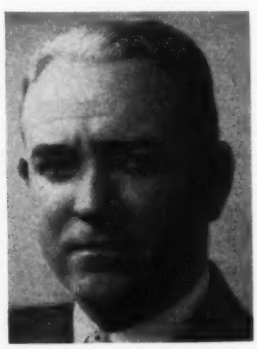
American Viscose Corp., Philadelphia, Pa., has transferred Dana B. Loudin, a chemist, from its Parkersburg, W. Va., rayon plant to its Standards Dept. at Marcus Hook, Pa., as head of the raw-materials division.

Carbide & Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp., New York, N. Y., has completed a new laboratory building at South Charleston, W. Va., designed for the study of synthetic fibers.

The Chemstrand Corp., Decatur, Ala., has appointed Dr. David W. Chaney assistant director of research. Walter H. Hindle has been appointed associate director of research of the newly created Dyeing & Finishing Section of the Research Dept.

Diamond Alkali Co., Cleveland, Ohio, has appointed David E. Pierce to the newly created position of director of manufacturing control.

Eastman Chemical Products, Inc., Kingsport, Tenn., has made the following appointments: C. F. Earnhardt, Jr.,



W. A. MOORE (left) and A. N. McFARLANE (right) have recently become vice presidents of Corn Products Sales Co.

News About **SUPPLIERS** (Continued)

manager of sales development and service; A. A. Owen, manager of export sales, production planning, and the order department; and John M. Heape, assistant manager of sales service.

Emkay Chemical Co., Elizabeth, N. J., has appointed Frank H. Gleason to its technical sales staff.

Firestone Plastics Co., Pottstown, Pa., has appointed Charles F. Edelmann as sales manager of the newly consolidated film and sheeting divisions. He was formerly sales manager of the Velon film division.

General Dyestuff Corp., New York, N. Y., has made Valentine Boise market manager, industrial dyestuffs, in the New York office.

General Electric Co., Waterford, N. Y., has appointed John T. Castles manager, Technical Services Unit, Marketing Section, in the Silicone Products Dept. His headquarters will be in Waterford, N. Y.

Hercules Powder Co., Wilmington, Del., have made plans for the large-scale manufacture of the key basic material for Dacron. Hercules will begin immediate construction of a $4,000,000 plant for the manufacture of dimethyl terephthalate.

Industrial Rayon Corp., Cleveland, Ohio, has appointed William A. Richardson manager of the Southern sales office, with headquarters in Greensboro, N. C. Mr. Richardson succeeds Joseph H. Mason, who has retired.

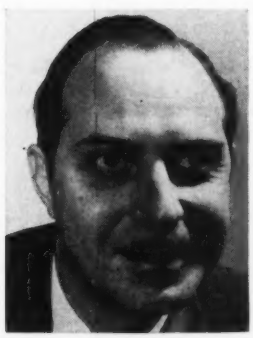
National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y., has employed Donald M. Georg as a technical service representative. He will report to George H. Hotte, manager of synthetic-fiber sales and service. Fred W. Noechel will head the new Textile Fibers Application Laboratory. Samuel A. Cooper has been appointed manager of the Synthetic Fiber Technical Service Dept.

National Starch Products Inc., New York, N. Y., has appointed Frank L. Murphy as Pacific Coast Div. manager.

Semet-Solvay Petrochemical Div., Allied Chemical & Dye Corp., New York, N. Y., has opened its new Niagara River petrochemical plant at Tonawanda, N. Y., for production of polyethylene products.

Texize Chemicals, Inc., Greenville, S. C., has appointed Carroll A. Campbell to work as an industrial field representative out of the Greenville office.

Wyandotte Chemicals Corp., Wyandotte, Mich., has made Herbert S. Schultz industrial engineer. In his new position Mr. Shultz will act as a technical service representative to Wyandotte's manufacturing division.

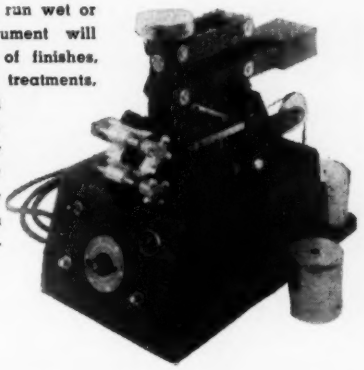


REINALD KAUFMAN (left) and WALTER M. KELLY (right) both vice presidents of Commercial Factors Corp., have recently been elected to the board of directors.

CSI-Stoll
FLEX TESTER

The CSI-Stoll Flex Tester was engineered to assist production personnel in quality controlled testing as well as the research department in their research program. This instrument provides for flex abrasion, bending, and roll and fold testing. Automatic electrical end points are provided for on these tests.

Tests may be run wet or dry. This instrument will test: the effect of finishes, water repellent treatments, softener and fiber lubricants; increased wear resistance by blending fiber mixtures, yarn pilling and fatigue.



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TEXTILE MILL CRAYONS

IMPORTANT MEMBERS OF YOUR PRODUCTION TEAM . . .

Made by experts . . . after years of careful research . . . EMPIRE TEXTILE MILL CRAYONS meet the industry's most exacting requirements for textile marking and identification.

Every year, millions of these top-quality marking crayons join the production teams of textile mills across the nation.

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JUNIOR EMPIRE

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MANAGEMENT CONSULTANTS TO THE TEXTILE INDUSTRY FOR OVER ⅓ CENTURY

We are pleased to announce the further expansion of our services to include:

methods time measurement **MTM**
accelerated training **AT**
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MTM is a predetermined time standard procedure. For several years other industries have found its application very effective. Leading textile manufacturers are now realizing the value of its application to their operations. While not replacing the stop watch, its complementary use, especially in methods engineering, is proving invaluable.

AT is a completely engineered method of instruction for job requiring skilled operatives. New employees receive the maximum of training in a minimum of time. Programs are tailored to a company's requirements and provide a uniform method for future instruction which can be administered by the trained plant personnel.

MPI is determined by a quick survey and the analysis of a plant's production and labor complement. It indicates, by process and product classification, where excessive manhours are being used per unit of production by comparison with the best attainable standards of operation.

We will be pleased to give additional information about these new services or any of the following:

• New Plant Developments • New Methods • Reorganizations • Plant Appraisals • Long Range Modernization Programs • Mechanical and Operating Surveys • Job Analysis and Evaluation • Work Loads • Incentive Plans • Product Costs • Cost Control Methods • Production Planning • Inventory Controls • Executive Personnel Service

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Our experience embraces Cotton, Wool and Synthetics, Yarn and Fabric Manufacturing, Finishing, Dyeing, Printing and Sewing Plants.

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NEWS ABOUT Mills

COTTON MILLS

American & Efird Mills, Mount Holly, N. C., has disposed of a note issue for $2,000,000. The proceeds will be used to defray certain current obligations, to finance improvements in the mills, and for additions in the working capital.

Burlington Mills Corp. is constructing a new addition to the Mays Mill, Cramerton, N. C. The contractor is J. R. Barger & Co., Mooresville, N. C.

Carolina Mills, Inc., is concentrating its operations at Maiden and Newton, N. C. Machinery is being moved to these two locations from the Huntersville plant. The move is being made to improve operations.

Cherokee Textile Mills—The citizens of Sevierville, Tenn., have approved an issuance of bonds up to $2,000,000 for the construction of a plant building that will be occupied by Cherokee Textile Mills. Cherokee plans to move from its present location in Knoxville. Plans for this plant have been drawn by the company's own engineers in conjunction with James Thomas Mitchell, Knoxville.

Clayton Carpet Co. has moved into its new plant at Spartanburg, S. C. At present 11 looms are in operation and 21 additional looms will be installed.

Cone Mills Corp., Greensboro, N. C., is reported to be considering a 100-acre tract in San Marcos, Tex., to be used for possible future expansion.

Kings County Cotton Mills, Hanford, Calif., is establishing a cotton mill in the San Joaquin Valley. J. M. Adamo, E. T. Combs, and George Beckwell are the organizers. Machinery has been acquired from the former Southern California Industries, Orange, Calif. Cotton yarn will be manufactured.

Linn Mills Co., Concord, N. C., is nearing completion of its three-story addition. The 22,000-sq.-ft. addition will double the present size of the plant. Spinning equipment will be installed.

Lockport Cotton Batting Co., Lockport, N. Y., has changed its name to Lockport Mills, Inc. The firm has diversified its production to include items other than cotton batting.

J. R. Newell Co., Carrollton, Ga., has been organized to make novelty yarns. Mr. Newell, former president and treasurer of Mandeville Mills, has purchased the novelty yarn equipment of that firm and has formed a company to operate it.

Pacolet Mfg. Co., Pacolet, S. C., has awarded a $120,000 construction contract to Fiske-Carter Construction Co. for an 18,000-sq.-ft. addition to its cotton storage facilities at its No. 5 Mill.

Riegel Textile Corp. is building a new plant at Brundidge, Ala. The cost is estimated at $275,000. Operations are expected to begin by June.

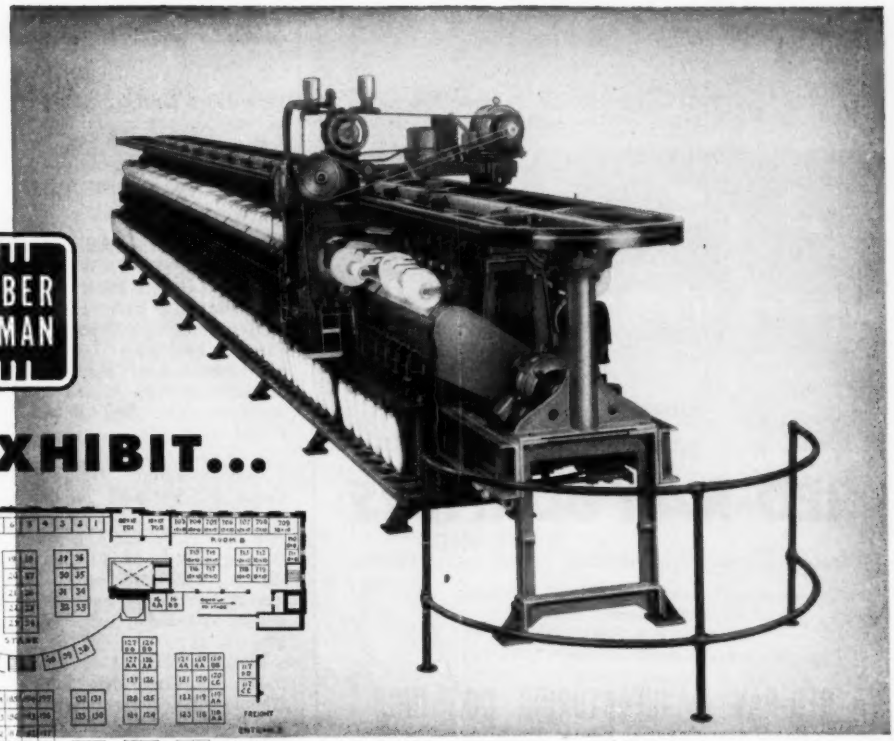
Spool Cotton Co., New York, N. Y., has changed its corporate name to Coats & Clark's Sales Corp.

Springs Cotton Mills has completed the conversion of 3,332 looms in its Lancaster, S. C., plant from belt-driven looms to motorized looms.

WOOLEN AND WORSTED MILLS

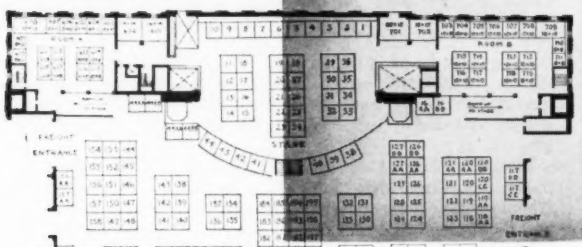
Beacon Hill Rug Co., Fletcher, N. C., has acquired a local building that contains about 10,000 sq. ft. of floor space. Improvements will be made and new equipment will

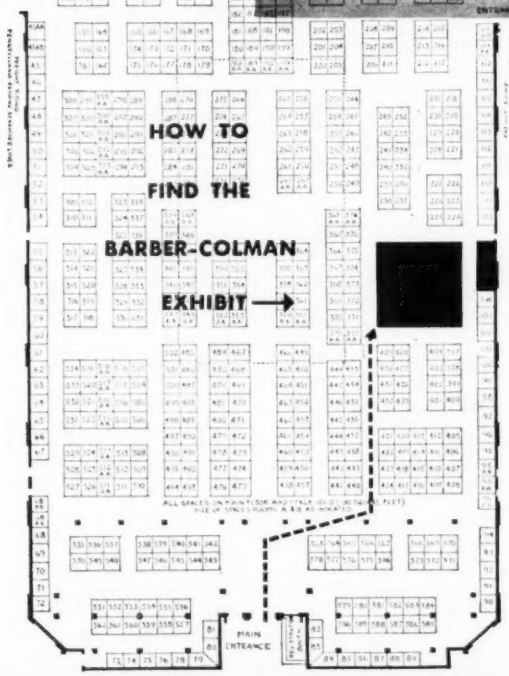
TEXTILE MACHINERY EXHIBITION
ATLANTIC CITY APRIL 26-30 1954
AMERICAN ASSOCIATION



BARBER COLMAN

WILL EXHIBIT...





THIS NEW LARGE-PACKAGE AUTOMATIC

SPOOLER

This new Type "D" machine, specially designed to extend the advantages of large-bobbin spinning, will produce packages weighing up to 6 pounds. It is an improved and modernized version of the familiar Type "C" Spooler. *See it in operation . . .*

AT THE **1954** AMERICAN TEXTILE MACHINERY EXHIBITION

ATLANTIC CITY

APRIL 26-30, 1954

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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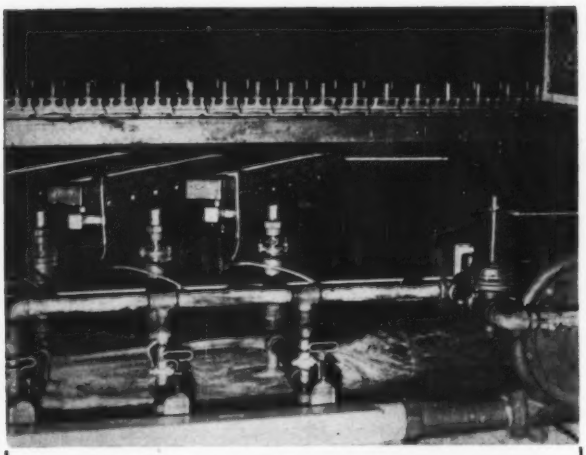
News About **MILLS**



RED-RAY BURNERS

Installed under opened tenter frame for increased drying capacity

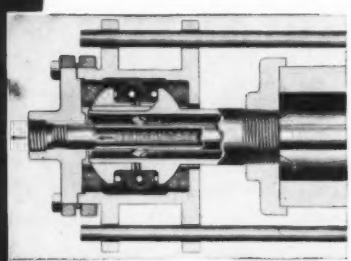
Write for Bulletin 18

RED-RAY MANUFACTURING CO., INC.

455 West 45th Street New York 19, N. Y.

Tel. PLaza 7-5174

THE NEW TYPE L-J Johnson Joint



Type L-J Johnson Joint, showing body lugs and support rods. Steam inlet doesn't show—is at 90° from these lugs.

With lugs cast right on the body to accommodate supporting rods, the Type L-J Johnson Joint has proved to be the neatest answer for a wide range of operating conditions. It removes the weight of body and connections from rotating assembly. And now it has been redesigned to reduce size, weight and price, and increase life of seal rings. As always, the new Type L-J is completely packless, self-lubricating and self-adjusting, with flexibility built right in to combat misalignment.

Learn how the new Type L-J can pay its own way. *Write for literature.*

The Johnson Corporation

814 WOOD ST., THREE RIVERS, MICH.

News About MILLS (Continued)

be installed for the production of wool carpeting and wool-tufted rugs. About 35 persons will be employed. Elliot Baron will be in charge of operations.

Glenn Woolen Mills, Norwich, Conn., has consolidated operations in its Plant B at Norwich. New buildings have been constructed and new machinery has been installed. Some machinery has been moved from Plant A in which operations have been discontinued.

Goodall-Sanford, Inc., has leased an $800,000 building now nearing completion at Hot Springs, N. C. The plant is being built by local interests. About $1,000,000 worth of yarn-manufacturing equipment will be installed.

National Felt Co., Easthampton, Mass., has leased 20,000 sq. ft. in the Barowsky mill building on Main St. The area will be used for storage and may be converted to manufacturing at a later date. Operations in Holyoke, Mass., are not affected by these changes.

Nichols & Co., Inc., Boston, Mass., plans to construct a $3,000,000 plant at Johnsonville, S. C. The new building will contain 150,000 sq. ft. of floor space. Lockwood Greene Engineers, Greenville, is the contractor. Completion is expected by July.

Person Mills, which began experimental operations in Roxboro, N. C., last May, is preparing permanent quarters in Roxboro. Operations will get under way at the new location soon.

Princeton Worsted Mills, Kingstree, S. C., is now weaving woolen and worsted materials in addition to Dacron.

Woonsocket Spinning Co., Woonsocket, R. I., has been sold by Serge Lamoreux, president and treasurer, to a financial group headed by Alex Craven and Theodore Birnbaum, of New York and Rhode Island.

Yajo, Inc., Cumberland, R. I., has been chartered by Clarence Tichall, Frank C. Cappellotti, and Marion Miselman. The new company will buy, sell, and process camel hair, cashmere, and other specialty textile fibers.

SYNTHETICS MILLS

Blackstone Mills, Inc., Clinton, Mass., will let the contract soon for a 250x386-ft. brick and masonry, steel-frame upholstery-fabric mill at Brownwood, Tex. The cost is about $1,000,000. McPherson Co., Greenville, S. C. is engineer.

Draper Bros., Canton, Mass., has discontinued the manufacture of knitted outerwear fabrics and synthetic fabrics.

Lehigh Spinning Co., Allentown, Pa., has installed four new twisters and a battery of precision winders.

Lorraine Yarn Mills, Palmyra, N. J., has awarded the contract for a one-story, brick-and-block manufacturing and office building to McVaugh Construction Co., Riverton, N. J., at $100,000. The new building will contain 14,000 sq. ft. The estimated cost is $100,000. Benj. S. Shulman, Philadelphia, Pa., is the architect.

Rochester Mill, E. Rochester, N. H., plans to install 100 more looms during 1954 in addition to its current battery of 196.

KNITTING MILLS

Arlene Knitting Mills, Inc., Norwalk, Conn., has moved to Ann St. in South Norwalk.

Atlee Fabrics, Inc., New York, N. Y., has been formed to take over the business of Atlantic Knitting Mills. Atlantic's manufacturing facilities for knitted novelty fabrics will be used and later expanded. The new company is headed by Hy Fuhrman and Michael Kaminer.

Belnap-Sulloway Mills Corp., Laconia and Franklin, N. H., is the new name for Belnap Mills Corp. and Sulloway Hosiery Mills.

News About **MILLS** (Continued)

Beaunit Mills, Inc., New York, N. Y., has been licensed to use the Redmanized process for its cotton knitted fabrics. This process involves the use of specially designed machinery.

Burlington Mills, Greensboro, N. C., has purchased Interstate Hosiery Mills, Lansdale, Pa. It is understood that operations will continue under the same management.

Carroll Hosiery Corp., Hillsville, Va., has been formed to manufacture hosiery. The maximum authorized capital stock is $100,000. Officers are Joseph Wysor Smith, president; John H. Young, vice president; and Roberta C. Heath, secretary and treasurer.

Childrey Hosiery Mills, Inc., Haw River, N. C., has been incorporated with an authorized capital of $100,000. Principals are Ella Childrey, Maxine C. Trollinger, and Nellie Childrey, all of Haw River.

Crescent Knitting Mills, Madisonville, Tenn., has installed 38 machines in its new plant at Madisonville. Socks and anklets produced there will be finished at the firm's plant in Niota, Tenn. Provision has been made at Madisonville for a future expansion.

Crossville Hosiery Co., Crossville, Tenn., is installing 220 machines in its new 8,000-sq.-ft. building.

E-Z Mills, Inc., New York, N. Y., has purchased the Bandy Mill, Cartersville, Ga. The firm recently completed the construction of a 30,000-sq.-ft. warehouse at Cartersville.

Griffin Hosiery Mills, Griffin, Ga., has installed 30 AA-3 argyle knitting machines manufactured by H. E. Crawford Mill Supply Co., High Point, N. C.

Hoover Hosiery Co., Inc., Concord, N. C., has sold the bulk of its capital stock to Cannon Foundation, Inc. C. A. Cannon, president of Cannon Mills, indicated that the mill will continue to operate for the present. New officers of the firm include Robert G. Hayes, president; Joe Ridenhour, vice president; W. H. Cannon, secretary-treasurer. E. Sauvain and F. F. Holt, in addition to the officers, form the board of directors.

Huffman Hosiery Mills, Inc., Granite Falls, N. C., has been incorporated to manufacture hosiery. Authorized capital is $100,000. Principals are A. W. Huffman, Jr., E. L. Huffman, and L. M. Abernethy, all of Granite Falls.

Jantzen Knitting Mills, Portland, Ore., has purchased a full block east of its present plant that will be used for future expansion.

Lykens Hosiery Mills, Inc., is moving to Marion, N. C., from Lykens, Pa. A new addition is being constructed at Marion to house the finishing equipment. About 300 knitting machines have been transferred to Marion. Ira F. Lipton is the plant manager.

Mars Hosiery Co., Inc., Asheville, N. C., has been incorporated to manufacture hosiery with an authorized capital of $100,000. Incorporators are William E. Greene, Irene White, and Ruth Luce.

Newton Glove Mfg. Co., Newton, N. C., is installing an air-conditioning system in its main plant. The company has an improvement program under way that includes the construction of a new 28x122-ft. office building. H. M. Young is the president.

Overbrook Hosiery Co., Maiden, N. C., has contracted to produce hosiery for Bachelors' Friend Hosiery Co., York, Pa. Overbrook purchased about 100 knitting machines and 30 loopers from Bachelor for installation in its North Carolina plant. All hosiery produced at Maiden will be dyed, boarded, and finished at the York plant.

Pasolds (Canada) Ltd., Vandreuil, Que., will open its new plant this spring. This firm is an offshoot of the British firm, Pasolds Ltd., Langley, England. Children's, women's, and men's knitwear will be made. Ingo Pasold is in charge of this new plant.

IS 60 YEARS EXPERIENCE

in successfully serving the hosiery and knitting fields enough to pique your interest in learning what we might do for you and your product? We would welcome the opportunity to discuss any problem.

Oscar Heineman

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DONALD G. BREWSTER, *President and General Manager*

Processors of Nylon, Orlon, Dacron, Silk, Rayon and Other Synthetic Fibers

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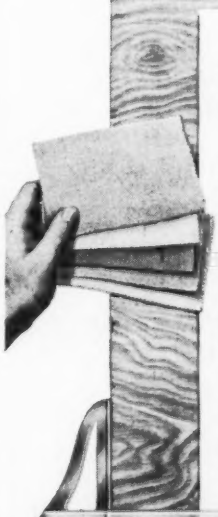
WHAT'S YOUR PROBLEM?



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All weights and constructions supplied
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Special chemical treatments

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All wool or cotton back

CARD CLOTHING FOUNDATION WOOLENS
Cotton warp or linen warp
All standard widths and weights

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Manufactured to exacting standards for uniformity
Both cotton warp and linen warp
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Complete range of types, sizes, and weights
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OTHER SPECIALTY WOVEN FABRICS
Developed at your request

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KENWOOD TEXTILE PRODUCTS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

UTICA Combination Winding and Cutting Machine

1 machine does the work of 2

THIS fast-producer has all the advantages of two machines, but uses the floor space of just one. Cuts light, medium, or heavy weight, both straight and bias fabrics. Cutter and Winder can be run at the same time. Rigidly constructed for long, trouble-free operation. Has measuring scale for cutting accurate rolls. It's safe—knife, grinding wheel, all gears and sprockets are well-guarded. Equipped with Veeder Root yardage counter. Made in 40, 45, and 55 inch width machines. Make your own bindings—as you need them—from the same material as your product—at lower cost. Write today.

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Now exclusive U.S.A. Agents for renowned HAASE and KUHN NEEDLE CO. of Germany. Est. 1859. Handling complete selection spring and latch needle including all needle services.

Hard Chroming, Raschel and Tricot Leading Specialties, etc.

10 Years Service to the Industry.

"WE HAVE A NEEDLE FOR EVERY KNIT"

What are your needle requirements?

Write, Wire or Phone.

OUR WORKMANSHIP IS GUARANTEED.

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the DUROMETER

FOR TESTING WINDING DENSITY

Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.

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90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N. Y.

News About **MILLS** (Continued)

Queen Knit Goods, Inc., Charlotte, N. C., has purchased 10 new knitting machines. The company plans to increase its present production.

Seamprufe Mfg. Co., McAlester, Okla., is erecting a plant for the manufacture of nylon hosiery at Okmulgee, Okla. The cost is $300,000. Harold Coplan is the engineer in charge.

Sheer Silk Hosiery Mills Ltd., Sussex, N. B., is installing machinery for the production of 75-gauge nylon hosiery.

Somerset Knitting Mills, Philadelphia, Pa. – Gideon A. Frankil has purchased half interest in this mill. Mr. Frankil has assumed the position of president, and David B. Rubin, partner, is secretary-treasurer.

Supersilk Hosiery Co., London, Ont., is erecting a two-story and basement plant addition, 30x80 ft. The cost is $100,000. V. J. Blackwell & Associates, London, Ont., is the architect.

Venus Hosiery Mill, Knoxville, Tenn., will move its plant to Newport, Tenn.

Wishant Hosiery Mills, Hickory, N. C., is constructing an addition to its knitting room to accommodate machinery transferred from its former branch at Maiden, S. C.

Wonderknit Corp., Galax, Va., presently operating in temporary quarters, expects to occupy new quarters in June. Boys' knitted shirts are manufactured.

DYEING AND FINISHING PLANTS

Dyecraft Corp., Philadelphia, Pa., has been formed to succeed Bailey Dye Works, Inc. Sol Reinstein is the president. Modifications in equipment are being made for sweater dyeing.

Erie Hosiery Finishers, Inc., Philadelphia, Pa., headed by Charles Mayer, will take over the finishing operations of the former Bailey Dye Works. Dyecraft Corp., as noted above, will operate Bailey's dyeing business independently.

Grace Bleachery of Springs Mills, Grace, S. C., has completed the steel work on a new addition that will measure 800 x130 ft. This addition will house new bleachery ranges and dyeing machines.

Lorraine Mfg. Co., which ceased operations at its Pawtucket, R. I., plant last summer, has acquired Sayles Biltmore Bleacheries, Inc., Biltmore, N. C., and will continue that business under the same name. George F. Sinkinson, Providence, R. I., president of Sayles Finishing Plants, Inc., Saylesville, R. I., will continue as president of the North Carolina firm.

Riverdale Dye Works, Yonkers, N. Y., has purchased Monarch Piece Dye Works, Inc., Union City, N. J. The company will operate under the name Riverdale-Monarch Dye Works, Inc., Union City, N. J.

Roanoke Mills, Inc., Roanoke, Va., has completed its new 7,000-sq.-ft. dyehouse.

U. S. Finishing Co., Norwich, Conn., proposes to erect a $300,000 warehouse in the Greenville section of Norwich.

MISCELLANEOUS MILLS

Fulton Bag & Cotton Mills, Atlanta, Ga., is planning an addition to the former mill of Mente & Co., Savannah, Ga. The cost is about $100,000, with equipment.

Georgia Ball Thread Co., Columbus, Ga., owned by O. Gooden Jenkins, has been purchased by Talbot Processing Co., Talbotton, Ga.

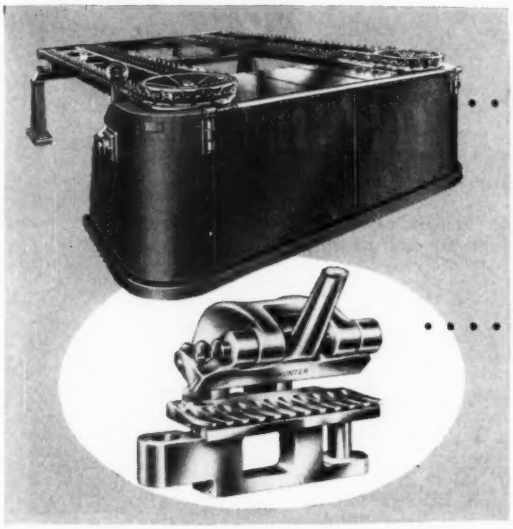
Ribbontrim, Inc., and Pollyanna, Inc., New York, N. Y., have been merged into a new organization known as Ribbontrim-Pollyanna, Inc., located at 213 West 35th St., New York. Joseph Gross and Jerry Sterling are heads of Ribbontrim and Pollyanna, respectively.

Tennessee Tufting Co, Nashville, Tenn., will start operation in its new plant this month. New tufting machinery has been installed.

NOW! SEE THEM IN OPERATION

in Booths 212-217 at the ATMA Show

TEXTILE MACHINERY EXHIBITION — AMERICAN ASSOCIATION — ATLANTIC CITY APRIL 26-30 1954



. . . M&W High-Speed TENTER FRAME

Numerous features have been added — all with the idea of improving output and cutting costs. See this frame, equipped with overfeeding equipment and operating with the new

. . . . . UNIVERSAL TENTER CLIP*

This clip is truly universal — with many unusual advantages. It will operate on any standard tenter frame as a conventional tenter clip without overfeed, or it will accommodate overfeeding without the necessity of pins. (*Dungler System)

Visit Booths 212-217. See these and other preferred M&W products: Swing Plaiters, Let-Off Stands, Batchers, Tenterettes, Complete Line of Tenter Clips.

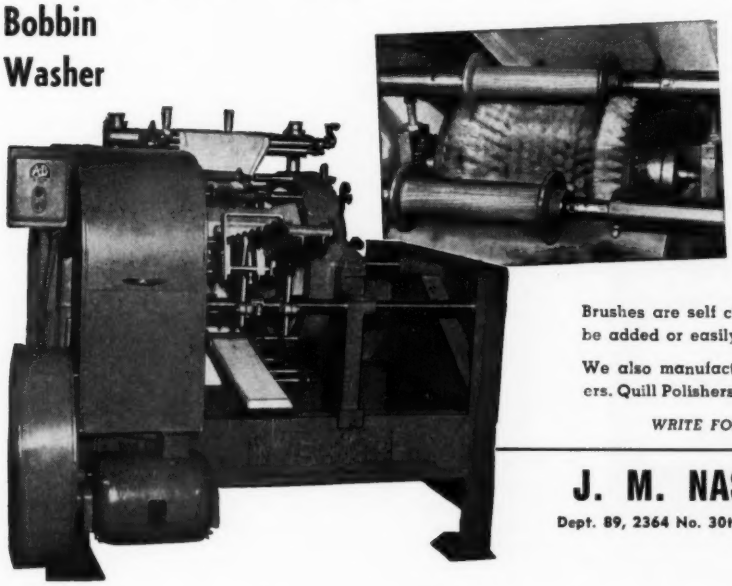
MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

M&W

WASH FLANGED BOBBINS

at 28 per minute with the

No. 89 NASH AUTOMATIC Bobbin Washer



This remarkable Nash machine is saving time and money for textile mills throughout the country. It's a ten-spindle machine that *does the entire washing and wiping operation* automatically from start to finish . . . eliminates the time and extra expense of hand washing. No dirt is left on bobbins to soil yarn on the finished fabric. The cleaning solution has no harmful effects on yarn, either natural or synthetic . . . has a 140-degree flash point and is not toxic, assuring safe operation.

Brushes are self cleaning . . . brush sections may be added or easily removed for different bobbins.

We also manufacture Automatic Bobbin Refinishers. Quill Polishers and special-purpose machinery.

WRITE FOR TECHNICAL BULLETINS

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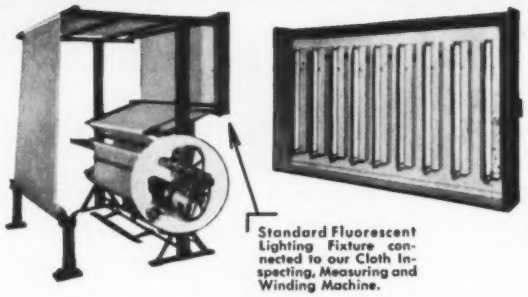
Dept. 89, 2364 No. 30th St., Milwaukee 10, Wisconsin

SPECIAL FINISHING MACHINERY — NASH — SINCE 1890

"Standard" CLOTH INSPECTING, MEASURING AND WINDING MACHINES



Standard Fluorescent Lighting Fixture connected to our Cloth Inspecting, Measuring and Winding Machine.

Standard Cloth Inspecting, Measuring and Winding Machines have V Belt Variable Speed Drive. Inspection Board is adjustable to any height and angle desired. All moving parts have replaceable bearings. Our Fluorescent Lighting Fixture provides 24-hour daylight, perfectly diffused by indestructible Plexiglas, controlled by 4 toggle switches.

WRITE FOR COMPLETE TEXTILE SUPPLY CATALOG

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JIFFY TEXTILE MARKER

For use on rayon, cotton and woolen material.
Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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RAYON PLANTS & TEXTILE MILLS
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MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA

NEWS ABOUT Men

William N. Banks, president of Grantville Mills, Grantville, Ga., has been elected a director of Fulton Bag & Cotton Mills, Atlanta, Ga.

Brooks Barlow has been named secretary and assistant treasurer of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

Clare Bedell has been named superintendent in charge of manufacturing operations of the Fabric Div., Gloversville Knitting Co., Gloversville, N. Y.

Warren A. Beh has resigned as general manager of the development department of Textron, Inc., New York, N. Y.

Arthur Blend has been named general assistant to **Winfield S. Freeman, Jr.**, vice president in charge of the corduroy division of A. D. Juilliard & Co., Inc., New York, N. Y.

A. F. Bonsal has resigned from the board of directors of Erwin Mills, Inc., Durham, N. C. **Charles R. Walters**, vice president of Abney Mills, Greenwood, S. C., has been elected to fill his unexpired term.

Luther Cashin has retired as resident manager of the Shawsheen Warehouse of American Woolen Co., Andover, Mass. The warehouse is now under the supervision of **Clarence S. Waugh**, manager of the Noils, Waste, and Synthetic-Fibers Dept.

Frederic A. Celler has been named to the newly created position of vice president in charge of sales at S. Stroock & Co., Newburgh, N. Y. **Cornelius A. Callahan** has been named to succeed Mr. Celler as works manager.

Boyd Chapman has been appointed general mill superintendent at Botany Mills, Inc., Passaic, N. J. He was formerly with Agawam Woolen Co., Agawam, Mass.

MATHEW F. BIRNBAUM has been elected president of Native Laces & Textiles, Inc., New York, N. Y. He succeeds his father, Leon Birnbaum, who has been named chairman of the board and continues as chief executive officer. Robert J. Birnbaum, vice president, has assumed the additional duties of secretary.

Marshall Chapman has been elected assistant treasurer of Riverdale Mills, Enoree, S. C., and Inman Mills, Inman, S. C.

General Mark W. Clark, former United States and United Nations Supreme Commander in the Far East, has been elected a director of Vision Hosiery Mills, Belmont, N. C.

Arthur Crossley has joined Mohino Santista, Sao Paulo, Brazil, as technical director. He was formerly with Somerset Mills, Roxboro, N. C.

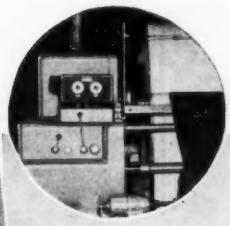
Copeland M. Draper has resigned as president of Draper Bros. Co., Canton, Mass.

Jason M. Elsas has been elected executive vice president of Fulton Bag & Cotton Mills, Atlanta, Ga. Mr. Elsas will be in charge of the new plant in New Orleans, La., when it is completed in June.

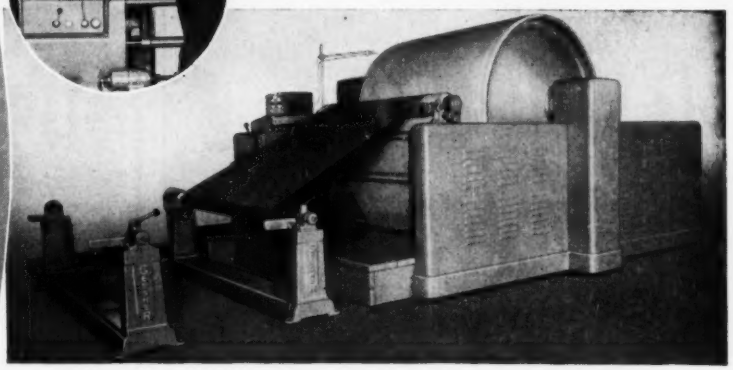
W. M. Emery has been

Do Your Semi Decating with a

GESSNER VERSAMATIC



Gessner's new 60" Versamatic Decating Machine (insert) Hydraulic drive controls and apron guide mechanisms



DAVID GESSNER CO.
WORCESTER, MASSACHUSETTS

Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ontario.

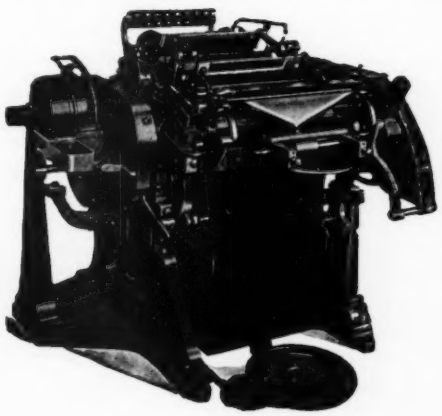
Gessner's new Versamatic Semi-Decating Machines built with 36", 48" and 60" diameter cylinders, with five important features, combine the utmost in decating quality and quantity.

1. Hydraulic drive and infinite speed variations, and controlled pressure roll; 2. High operating speeds made possible by (a) the automatic apron tension control, (b) the automatic apron guider; 3. Foolproof, internally heated steaming cylinder; 4. Throttle steam with automatic cycle; 5. 60" Versamatic will decate 8 pieces or more of woolens or worsteds, and upwards of 1000 yards of synthetics per loading.

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

WORLD-FAMOUS

SCHLUMBERGER COMB



for French-Type Worsted Mills

OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

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GUEBWILLER, ALSACE, FRANCE

Founded 1808

Open End Cooling Cylinder For Setting Resin Finish

Eliminates cooling off period. Reduces static. Sets colors—whites are whiter. Teflon coated (optional) to prevent sticking. Easily applied to Calenders, Embossers, Tenters, and Sanforizers.

Warm water drains over flared end of cylinder. No rotary joints. Operates at low cost on small quantity of water without refrigeration.

Trial orders are quickly repeated. Send for sizes.

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100 CAMBRIDGE STREET, LOWELL, MASS.

Cam Dryers | Jacketed Cylinders | Mixing Kettles
Dye Tanks | Web Dye Padders | Lab. Equipment

Control **MAXIMUM PRODUCTION**

with G. S. HAND TACHOMETERS *and* SPEED INDICATORS

1% Accuracy for any range from 30 to 100000 RPM or surface speed.
Antimagnetic durable mechanism;
Efficient repair service at moderate charges.

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

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TEXTILE BRUSHES for EVERY NEED

Solve all your textile brush problems by one stroke with the complete service we render for all mill operations. Gastonia Brushes are always dependable.

LOOM DUSTER
Solid back construction.

WORKMANSHIP AND MATERIALS ARE GUARANTEED

Don't brush aside your brush problems. Write us for money saving, dependable and efficient custom made textile brushes. Catalogue on request.

GASTONIA BRUSH COMPANY
Gastonia, N. C.

John T. Harrell, Mgr. Phone: 5-2422

News About **MEN** (Continued)

EDWARD S. RUDNICK, director of research of Wamsutta Mills, New Bedford, Mass., has been elected an associate of the British Textile Institute.

W. L. JAMES has been elected chairman of Mellor Bromley & Co. Ltd., Leicester, England, Mr. James, succeeds the late H. R. Backhouse.

named overseer of weaving and dressing at Robinson Mfg. Co., Oxford, Me., succeeding **Joseph M. Trebilcock**, retired.

Joseph A. Etchells has been named superintendent of finishing at Bachmann-Uxbridge Worsted Corp., Cedartown, Ga.

Thomas V. Fanciera has resigned as superintendent of the pile-fabric division of Cheney Bros., Manchester, Conn. **William Hall**, assistant superintendent, has succeeded him.

Gustav Freund, II, has been elected vice president and treasurer of Visking Corp., Chicago, Ill. **Howard Medici**, formerly treasurer, has been promoted to executive vice president.

N. Fyffe has been named treasurer of Mercury Mills Ltd., Hamilton, Ont. Other promotions are **P. T. Hadden**, comptroller; **G. A. Flavelle**, assistant secretary; **A. L. Margetts**, manager of the hosiery division; **R. Waller**, manager of the underwear and fabrics division; **S. Bridges**, industrial-relations and production-engineering manager.

N. A. Gregory and **L. C. Thomas**, assistant treasurer and assistant secretary, respectively, of Erwin Mills, Inc., Durham, N. C., have been elected vice presidents of the company. Mr. Gregory will be in charge of sales and Mr. Thomas will serve as assistant to **Carl R. Harris**, vice president and general manager in charge of manufacturing. **E. W. Dunham**, secretary, has been given the additional title of assistant treasurer; **Fulton O. Smith** has been named manager of the accounting department, formerly managed by Mr. Dunham.

R. W. Hawkes has been appointed general manager of Galax Knitting Co., Galax, Va., succeeding **Tim B. Pollard.**

Thomas E. Lawson, superintendent of the Grandy Plant of Pacific Mills, Columbia, S. C., has been promoted to assistant manager of the Columbia Div., Columbia. **Robert G. Sharpe** succeeds him at Grandy.

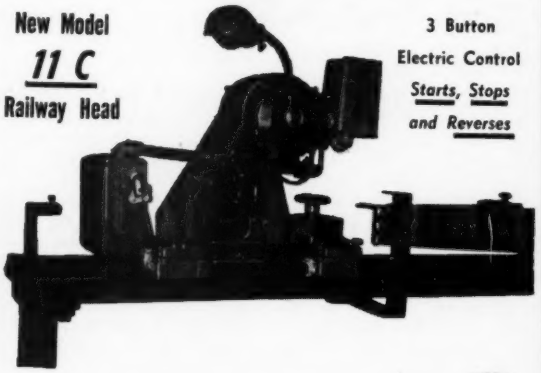
Barnett Leavitt has resigned as secretary and a director of Gropper Knitting Mills, New York, N. Y. **George Gropper** has taken over the duties of secretary in addition to serving as treasurer.

J. H. Leverette has been named purchasing agent and **James Scott** assistant purchasing agent for the Southern plants of American Thread Co., located at Newnan, Dalton, and Tallapoosa, Ga.; Clover, S. C., Bristol, Tenn.; and Troutman and Sevier, N. C. **E. R. Naugle** is general purchasing agent for the company.

Robert R. Liner has been named assistant superintendent of the new Durst plant of Greenwood Mills, Greenwood, S. C. **W. Troy Harris** was named overseer of carding.

New Model
11 C
Railway Head

3 Button
Electric Control
Starts, Stops
and Reverses



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Push button control travels with the motor. Motor controlled through magnetic switches.

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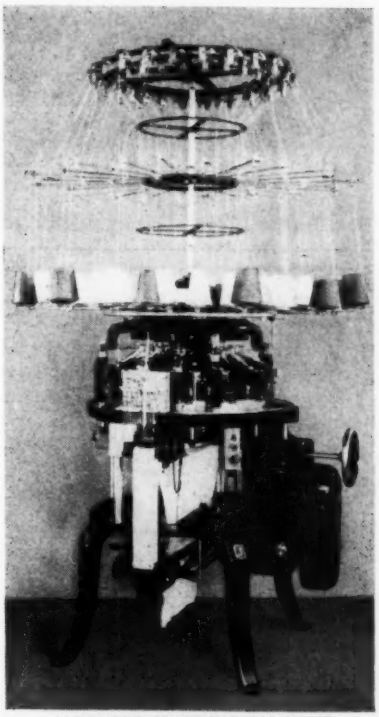

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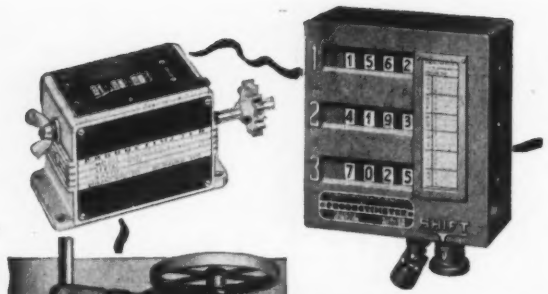

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News About MEN (Continued)

Leonard W. Long has been named assistant to the president of Frank Ix & Sons, Charlottesville, Va.

John B. Love has been appointed assistant manager of the Willimantic, Conn., mills of American Thread Co.

Fred M. McDonald has been appointed superintendent and manager of the Neuse Plant of Erwin Mills, Inc., Durham, N. C. He succeeds **L. E. Gatlin Jr.**, who was made manager of the Aragon, Ga., plant of A. D. Juilliard & Co.

W. Bryan Moore has been elected to the newly created position of chairman of the board of Wade Mfg. Co., Wadesboro, N. C. **Frank B. Bradley** was named president to succeed Mr. Moore.

Russell C. Parrish has been named assistant manager of Riegel Textile Corp., Greenville, Ala.

Sir Frank Platt has been elected to the chairmanship of the board of Lancashire Cotton Corp., Manchester, England. He succeeds **Sir John Grey**, retired. Sir Frank will continue as managing director.

Earl D. Rhodes has been appointed vice president and **Wilhelm Moe** general superintendent of F. C. Huyck & Sons, Kenwood Mills, Rensselaer, N. Y.

Richard G. Robertson has been named assistant superintendent of the Franklin Mills of M. T. Stevens & Sons Co., Franklin, N. H. He succeeds Ray Spofford, resigned.

Heyward V. Simpson has been transferred to the Trion, Ga., division of Riegel Textile Corp., where he will head the dyeing department. He succeeds **Val Winkelman** who has resigned to join Russell Mfg. Co., Alexander City, Ala.

Willard F. Staples has rejoined Crescent Corp., Fall River, Mass., as executive vice president. For the present, he will retain his title as president and treasurer of Merrimack Mfg. Co., Lowell, Mass.

Conway L. Still has resigned as manager of Springs Cotton Mills, Chester, S. C., to accept the position of president of Hunt Loom & Machine Works, Inc., Greenville, S. C.

Richard N. Stone, vice president of Wamsutta Mills, New Bedford, Mass., has been elected to the board of directors, succeeding Anthony Dreyspool.

J. B. Talbert has been transferred by Burlington Mills from Raeford, N. C., to the Oxford, N. C., plant where he will be assistant superintendent. He succeeds **Raymond Mayhew,** who has been transferred to Gastonia, N. C.

Jack A. Vandenberg has resigned as president of Knightsbridge Mills, Lawrence, Mass. **Lionel David,** vice president,

CLARENCE TAGGART has been elected a vice president of Riegel Textile Corp., New York, N. Y. He will continue as manager of the cotton finished-goods department.

ROBERT M. PULLY has been named superintendent of the Clover Mills of American Thread Co., Clover, S. C. William L. Rankin, Jr., has been made assistant superintendent.

TEXTILE WORLD

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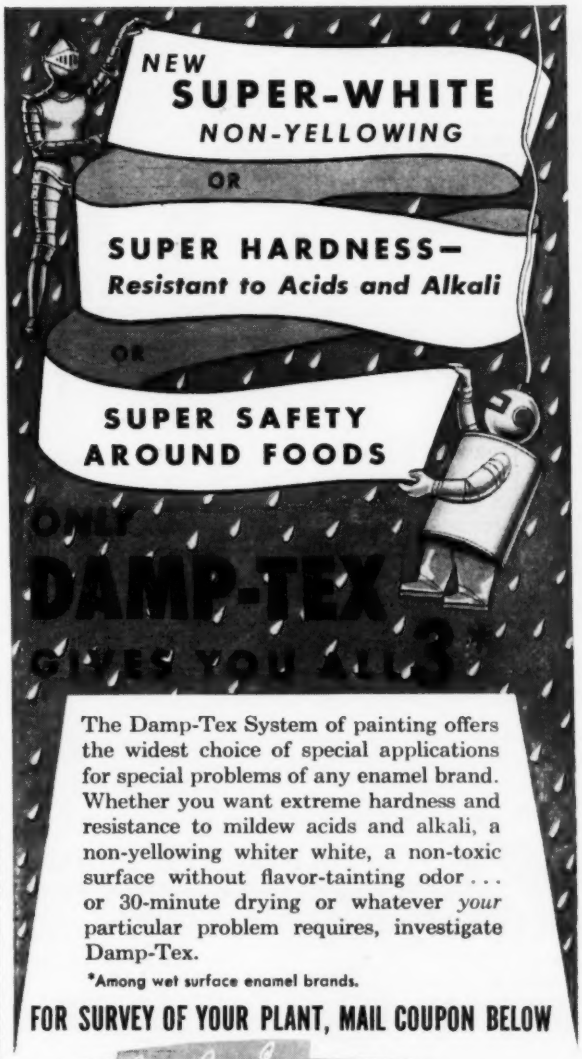

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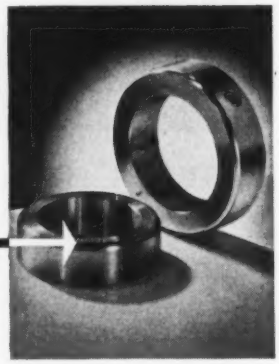

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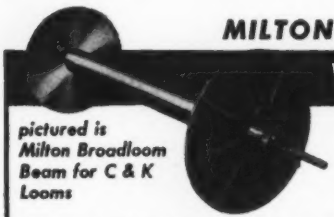

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News About MEN

(Continued)

will continue in charge of operations.

A. W. Vint has been appointed director of research of American & Efird Mills, Inc., Mount Holly, N. C.

William J. Wardall, Albert A. Cree, Kurtz M. Hansen, and **Christian A. Weissner,** have been named to the board of American Woolen Co., New York, N. Y.

Courtney Whittin has been named assistant treasurer and controller of the Paul Whitin Mfg. Co., Northbridge, Mass.

C. P. Wood, industrial engineer with Lockwood Greene Engineers, Inc., New York, N. Y., and a former consulting editor of TEXTILE WORLD, contributed the article on Factory Construction and Planning in the current edition of Encyclopedia Britannica.

Onias Yelle has been named overseer of combing at Hart Top Mfg. Co., Holyoke, Mass.

OBITUARY

Charles Almy, 65, cofounder of Dewey & Almy Chemical Co., Boston, Mass.

William Amory, 85, chairman of the board of Pepperell Mfg. Co., Boston, Mass.

H. R. Backhouse, O. B. E., chairman of the board and managing director of Mellor Bromley & Co. Ltd., Leicester, England, and member companies of the Mellor Bromley Group.

Benjamin L. Bonnel, 69, president of Highland Knitting Co., West Springfield, Mass.

Charlie L. Hairston, 76, overseer of the cloth room of Lydia Mill, Clinton, S. C.

Ralph B. Hunt, 62, departmental superintendent of the Brandon Mill, Woodruff, S. C.

Bernard Joseph Kane, 62, director of purchases for Fulton Bag & Cotton Mills, Atlanta, Ga.

John J. Kane, 92, president and treasurer of Fashion Screen Printing Co., Paterson, N. J.

Harry F. Keeler, 51, retired purchasing agent for James Lees & Sons Co., Bridgeport, Pa.

Kenneth A. Leer, 35, president of Kenella Label Corp., Paterson, N. J.

R. M. Leonard, 76, superintendent and general manager of James H. Kerr & Sons, Philadelphia, Pa.

Ben F. Mason, 68, overseer of the weave room of Startex Mill, Startex, S. C.

John McCuaig, 60, an overseer in the spinning department of the Canada mill of Canadian Cottons Ltd., Cornwall, Ont.

William H. Regnery, 76, president of Joanna Western Mills Co., Chicago, Ill.

Eugene Reneau, 44, superintendent of Gastonia Weaving Co., Gastonia, N. C.

Mercer Reynolds, Sr., chairman of the board of Southern Chemical Cotton Co., Chattanooga, Tenn.

Joseph T. Sayward, 80, president of the North Berwick Woolen Co., North Berwick, Me.

David E. Shaw, 62, former president of Velveray Corp., Clifton, N. J.

John Newman Simmons, overseer in the White plant of Springs Cotton Mills, Fort Mill, S. C.

F. Elwood Struve, 64, executive vice president of the **Apex Hosiery Co., Philadelphia, Pa.**

Marius P. Vadon, 73, retired, founder of Mt. Hope Finishing Co., North Dighton, Mass., LaFrancaise Silk Dyeing & Finishing Co., Paterson, N. J., and Lafayette Piece Dyeing & Finishing Co., also located in Paterson.

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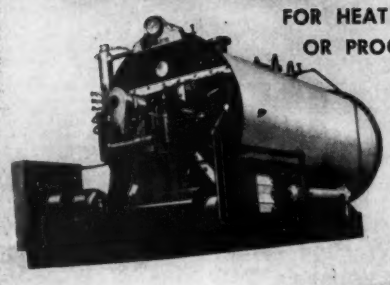

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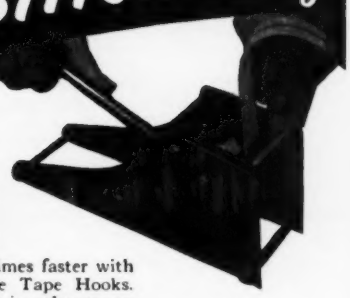

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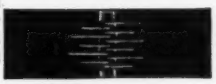

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2 Whitin 4-Bank Single Rub Apron Tape Condensers 60" 1945, 8 Josephy's 4-Bank S.R. Apron Tape Condensers 70". **6 Duesberg-Bosson Peraltas 74½", 1953.**

12 Whitin Tape Drive Wool Spinning Frames 8/1944, 4/128-Sp; 8/120-Sp. Model-E.

James Hunter 5-Bowl Wool Scouring Range 1951: Comprising Harwood 60" Wool Dispenser, 2 J-H 60" Auto Pit Feeders, Double Cylinder Opener, Slat Apron Suspension type Weigh Conveyor with Toledo scale. Cast Iron 5-Bowl Train Wool Washing Bowls, Squeeze Rolls, and **Proctor & Schwartz Raw Stock Wool Dryer 96".** P & S Ceiling Condenser. U. S. Hoffman Vacuum Sweeping System. Grease recovery unit with tanks & pumps.

3 Amco Turbo Type Head Humidifying Systems, with piping, controls and air compressors.

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294 Spindles Whitin Schweiter Automatic Filling Winders 1949-1942 Models MS. 2 H-W Yarn Conditioners #ST-2 1950, 2 Terrell Bobbin Strippers Type 1; 2 Whitin High Speed Dressing Reels 96" Model K 1941. 2 Warp Compressor Beamers; Saco-Lowell Hot Air Slasher Unit 84" Model C 1941. Abbott 198 Spindle Auto Cone Winder 1949; 4 Whitin Model BB 200 Spindle Twisters 4½" x 3" Ring 1939. 2 Reiner 72" High Speed Warpers & Creels, 1940-50. 2 Foster Model-102 Cone Winders 100 spindles. 4 Foster Model 57 Doublers 100spindles. 3 Riggs & Lombard SS. Lined Fulling Mills. 3 Gessner Rubber Roll Padders 72". 8 Riggs & Lombard Totally Enclosed SS. Piece Dye Kettles 8', 12 string; Parks & Woolson 72" Semi-Decating Unit 1949; 2 Parks & Woolson (Davidson) 3 Blade Shears 66½".

32 McGlynn Hays 400-Sp. Herr Ring Tape Drive Wool Spinning Frames 1949/48. 3" Ga. 2¼" Ring. All M. D. 7 Frames Equipped with Pneumafil Unit 1950 Mod-WW21.

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YOUNG MAN 37 has 18 years progressive and outstanding experience in quality and colour blending of stocks (wool, shoddy, synthetics) through all manufacturing stages to finished cloth. Well versed in design (original and copy). Has fair knowledge of the trade, styling, promotion, modern and cost accounting, some managerial experience. Desires position with progressive firm where chances for promotion toward management are excellent. Very good references as to Character, ability and experience on request. PW-1825, Textile World.

PREPARATION AND Weaving Overseer available. 25 years' practical experience on Synthetic Fibres and Silk on any make of Preparation Machines also on Draper and C&K looms. Capable training own help. PW-1794, Textile World.

ELDERLY TRICOT Mechanic expert looking for position anywhere. PW-1684, Textile World.

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WEAVING SUPERVISOR. Thoroughly experienced wool worsted blends. Available immediately. Excellent background foreman boss weaver overseer all operations yarn to cloth off looms. Expert A-1 loomfixer all types C&K looms. PW-1652, Textile World.

RASCHEL MECHANIC, designer of Fabrics, assume charge knitting-warfing—25 yrs., experience, locate anywhere, available. PW-1642, Textile World.

SALES POSITION Wanted: Thorough knowledge of sales, construction and installation of soft floor coverings. Currently employed as salesman for large wholesale distributor. Age twenty-four. Married. Will relocate. Complete resume will be sent upon request. PW-1570, Textile World.

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ANYTHING within reason that is wanted in the field of Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

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Bleacher, Dyer & Finisher

Wool, cotton, synthetics, all classes dyestuffs on kettles, pads, boxes, jigs and continuous.
Thoroughly experienced on preparation dyeing & finishing for abrasive trade. Efficiency, production, & quality control assured. Available on reasonable notice. Location no drawback.

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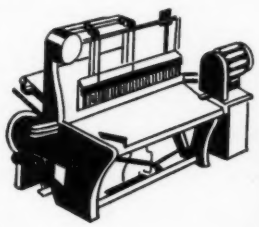

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3/54

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TEXTILE MACHINERY

And Equipment of

THE P. McGRAW WOOL CO.

Wool Combing Plant

1232 River Ave., Pittsburgh, Pa.

Thursday, March 18, at 11 A. M.

on the premises

6 Warner & Swasey motor driven Textile Screw Pin Drafting Machines, 24 Can Capacity Creels, Serial Nos. 1105461, 1105462, 1105463, 1105464, 1126186, 1148052.

Harwood Bramwell Feeder, 2 Sargent No. 188 m.d. Openers, James Hunter model D 48" m.d. 4 cast iron Bowl Scouring Train with Squeeze Rolls.

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1—3 Roll 68" Hydraulic 30 Ton Calender—M. D.
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1—3 Roll 65" V. V. Calender—M. D.
1—58" Hermas Meas. & Inspect. with reverse, like new—$350.00
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1—V. V. 48" Decatizer, Pump, Motors & Blanket—$1800.00
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1—50" Padder—2 Rolls—$350.00
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Most equipment VERY LATE MODELS—All at a FRACTION of original cost

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Late type motorization. Like-new battens ranging from 56 to 92 spaces. Equipped for Milton type broad beams, 16"x42". Cam motion and Dobbies.

4 Reconditioned Heavy Duty C&K WEBBING LOOMS

3 floor type cam motions. 1 dual heavy duty head motions. Equipped with roller chain shuttle motion. Large pkge. head quills. Broad beams.

Hundreds of other items such as Milton Broad Beams, Blocking, Roll-Up and Finishing Equipment.

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1 Complete Southern Weaving PLANT

80,000 sq.ft. 1 story modern building. Complete with stainless steel Bonson Humiducts.

1—Cocker 1950 High Speed DIRECT WARPER

To take 30" diameter Allen beams, 54¼" between heads. With 1 Sipp Eastwood 800 end magazine cone creel. 4 lb. cones.

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Complete with all supplies.

1—Johnson 60"—7 can SLASHER

Complete with Powers instruments and late-type U.S. drive.

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In excellent condition.

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208 spindles each. Like-new condition. 5 machines erected but NEVER USED. Complete with bobbins and racks.

150—Foster 75-A NYLON CONERS

Roller bale pineapple attachments. Gear gain. Motorized. SS emulsion troughs and rolls. Excellent condition.

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Complete with circulating system and viscometer.

76—1950 12 oz. Atwood D.D. UTILITY UPTWISTERS

Complete with bobbins and racks.

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3-30 gear gain. boxes. Anti-wear tensions. Motorized.

9—U. S. Textile 80 Spindle REDRAWS

5—D.D. Sipp Eastwood WINDERS

136 spindles each.

3—1948 H&W Yarn Conditioning Ovens

1—Lydon Cake or Skein Dryer

9—Atwood 80 Spindle Mod. 200 High Speed REDRAWS

Many other items, all in excellent condition, available for your inspection.

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additional items: laboratory and office equipment, machine shop

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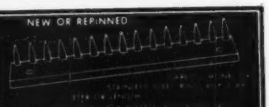

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P. O. BOX 406 ANDERSON, S. C.

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Used Infra Red Singeing Machine
Accommodating 60" wide goods with new burner and combustion equipment
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Installed in 1951 and 1952, Saco-Lowell —Latest Type
Includes Opening, Picking, Carding, Drawing, Roving, Spinning, Coning, Winding, and Laboratory Equipment.
6336 Spindles—Saco-Lowell Z-2 WW Frames
24 Frames of 264 Spindles each, 2½" Ring, 4" Gauge, & 9" Traverse
Handles ½ to 6 deniers. Staples: 1½" to 3". Counts: 10s to 30s.

HUNDER CARBONIZING TANK—NEVER USED
Lead-lined Cypress Tank—11' Long x 4'6" Deep x 8' Wide
Fittings Acid Resisting Metal.

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New 1948—Used but little

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304 Spindle — 3½" Gauge — 10½" Traverse

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115 Volt — 750 Watts

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New Allis Chalmers in original cases
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34—Companion Sheaves 18" Pitch Diameter
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1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
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4 Three (3) Roll Padders 45"
30 50" Dry Cans
4 Johnson Slashers—7—5—3 Can 66"
2 90" S.S. Jiggs
8 50" S.S. Jiggs
1 72" Greige Washer with Squeeze Rolls 24" long
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9 Atwood Single Deck Utility Spinners
8 Sipp Warpers and Winders
20 ±90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
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It costs next to nothing to take a few simple steps which may save hundreds of lives. Here they are. Check them off today.

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☐ **Check contents** and locations of first-aid kits. Be sure they're adequate and up to date. Here, again, your CD Director can help. He'll advise you on supplies needed for injuries due to blast, radiation, etc.

☐ **Encourage personnel** to attend Red Cross First-Aid Training Courses. They may save your life.

☐ **Encourage your staff** and your community to have their homes prepared. Run ads in your plant paper, in local newspapers, over TV and radio, on bulletin boards. Your CD Director can show you ads that you can sponsor locally. Set the standard of preparedness in your plant city. There's no better way of building prestige and good community relations—and no greater way of helping America.

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Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. This unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a valuable source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service in which you are currently interested. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance. Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies

This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

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Allen Mfg. Co.	238	O
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American Monorail Co.	62	D, L
American Numbering Machine Co.	240	E, L, R
American Pulley Co.	65	Q
American Schweiter Co.	8	T
American Steel & Wire Div.	219	O
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Carroll & Co., J. E.	258	E

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Unibal
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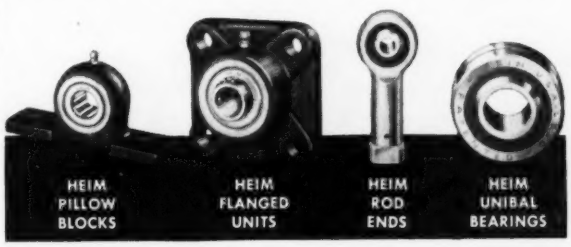

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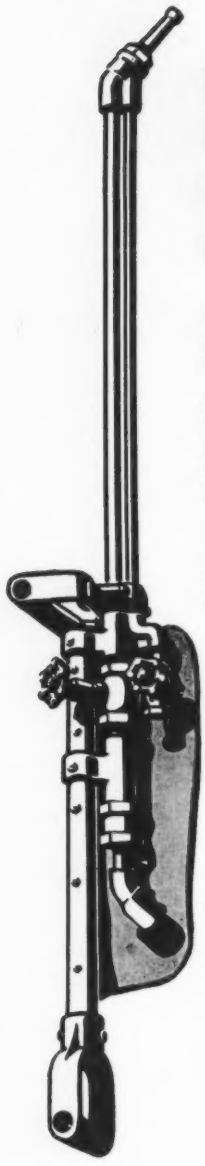

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OAKITE

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Celanese Corp. of America Chemical Div.	215	C
Yarn Div.	66	G
Century Electric Co.	10	F
Chemstrand Corp., The	60-61	G
Chicago Pneumatic Tool Co.	237	H
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Corn Products Refining Co.	72	C
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Lunkenheimer Co., The	79	H
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Maple Flooring Mfrs. Assn	204	B
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M-B Products	248	T
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Reliance Electric & Eng. Co	33	Q
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Sonoco Products Co	29	T
Southern Shuttles Div., Steel Heddle Mfg. Co	187	R
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for the best in CANVAS Steaming and Conditioning Baskets

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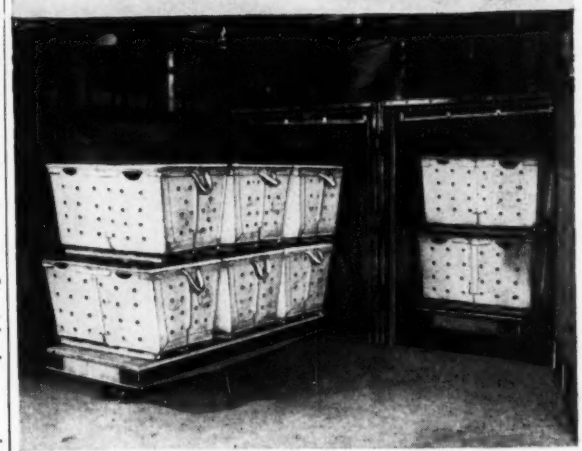

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- Special extra heavy Lane duck body for extra long wear.
- Light-weight, extra-strong, rust-resistant spring-steel frame with sturdy, hardwood bottom *double* riveted with non-rusting rivets.
- Rust-proof eyelets on all sides allow thorough efficient conditioning.
- Reinforced, rivet-fastened handles for safe moving.

STANDARD SIZES AVAILABLE

No.	Long	Wide	Deep
1½	18"	14"	12 "
2	22"	14"	14 "
2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there's only *one* Lane. *Always* look for the *Lane* mark—*to be sure!*

See your distributor or write . . .

Canvas Basket Craftsmen Since 1894

Lane

THE LANE BASKET

W. T. Lane & Bros., Inc., Poughkeepsie, New York

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Square D Co.	159	F
Staley Mfg. Co., A. E.	151	C
Standard Mill Supply Co.	256	E
Standard Pressed Steel Co.	262	O
Stanley Works, The	209	B
Steelcote Mfg. Co.	261	B
Steel Heedle Mfg. Co.	187	R
Stephens-Adamson Mfg. Co.	163	O Q
Stewart Iron Works Co., Inc.	232	B
Stop-Motion Devices Corp.	259	L
Stowe-Woodward, Inc.	147	E
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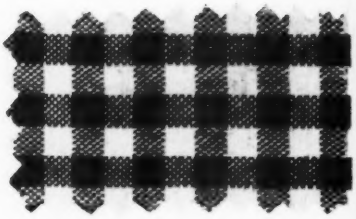

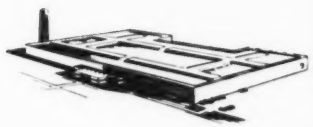

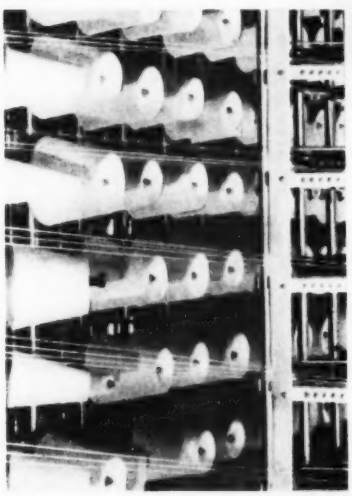

basic engineering principle:

methods may become obsolete
good ideas never grow old

Engineers for 52 years . . . **J. E. SIRRINE COMPANY**

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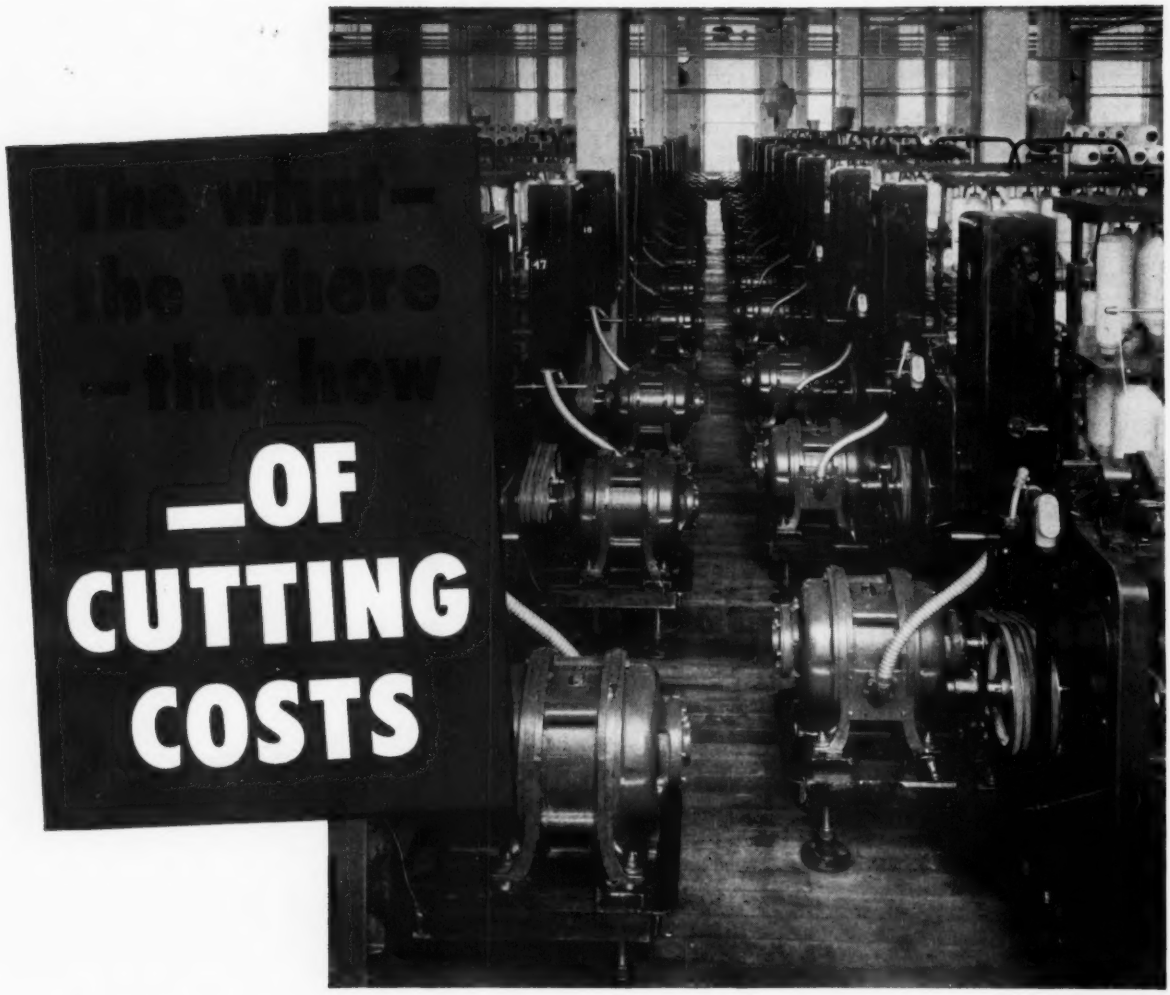
A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING BUSINESS, COMMERCE AND INDUSTRY



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WHERE can the cut be made? Wherever you have high-speed, grease-lubricated ball or roller bearings.

HOW can it be done? By lubricating with premium-quality *Texaco Regal Starfak*. It has far greater oxidation resistance than ordinary grease. It won't separate, or form gum. It *stays in* the bearings.

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Let a Texaco Lubrication Engineer help you. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

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